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SPAVIN.

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(*Continued from p.* 87.)

5. That the pain is due to the inflammation, the intensity of the one being equal to that of the other, although individual sensibility may govern this to a certain extent (Schütz, Dieckerhoff). Dieckerhoff says that when the inflammation in the bursa abates, and this becomes thickened, the pain ceases.

If the pain lasts for any length of time, the capsule of the joint is sure to become implicated, and the movement of this causes pain, so that when the bones become cemented together, movement is stopped and the pain also; but if this cementing of the bones is incomplete, pain may last for an indefinite time.

If the bone is affected, and it become dense and hard (osteosclerosis), the pain ceases; but should the inflammation be of a chronic character (as it usually is), the inflammation deep-seated and intense, then pain is present, but to what degree we are not prepared to say (Dieckerhoff).

The pain is most severe during extension of the hock, *i.e.*, when the foot is on the ground, and, as Schütz points out, it is this that causes spavined horses to have that snatching action of the limb which is so often seen when first put into trot after coming out of the stable, or put from the diseased side to the sound in a stall; whereas, Dieckerhoff says that the snatching action of the limb in Spavin is produced by inflammation of the bursæ. The

horse may walk sound, because he can more easily distribute the weight of the body to the outside of the hock and hoof, in doing which the point of the os calcis is thrown outwards, and, when the weight is taken off the limb, the ligament retracts, bringing the limb up with a jerk. This also explains why horses can turn easier to the diseased side than the opposite, because the weight is carried by the outside of the hock. Dieckerhoff also explains this snatching action in another way, viz., by shortening of the fascia on the anterior part of the limb, which is attached to the tendon of the flexor pedis, brought about by the horse standing with the hock flexed. Whereas, another theory of this jerking action is that it is due to shortening of the capsule and ligaments, as well as the fascia.

The fact that spavined horses sometimes move their hock stiffly—that is, extended both in work and rest—is due to the fact that the hyperostosis affects the anterior part of the hock, which, when flexed, produces pain; so the animal avoids flexing the joint.

Diagnosis.—In order to diagnose the presence of Spavin, it is important that three things should be taken notice of, viz.:—

1. To understand the various forms a natural healthy hock may assume.

2. The manner of going about the animal, and the various methods at our command to assist us to detect the pathognomonic signs.

3. The recognition of those deviations from the normal limb which may be mistaken for Spavin.

Dieckerhoff describes three forms, which the inner surface of a horse's hock may assume, compatible with health.

(*a*) *The common, or convex form* (or full hock), in which a slight convexity exists at the region of the inferior articulation.

(*b*) *The even, or slanting form* (straight hock), in which no such convexity exists, but is straight and even from above to below. Horses with so-called flat hocks present this form.

(*c*) *The conean form* (hollow hock) is that which is thicker above and below, with a concavity between them. There is frequently a concavity between the calcaneus and astragalus.

Dieckerhoff's experience led him to believe that the first was

most commonly affected with Spavin, the second seldom, and the third rarely or never.

The manner of going about a horse for the detection of Spavin is not only important for the safety of the veterinary surgeon, but also to show "horsemen" that we know what we are about. With your permission, gentlemen, I will explain what I mean by this, or you may misunderstand me, and interpret it wrongly. A horseman judges us *by his own knowledge*, which he learns by seeing others; therefore, what the majority of horsemen do themselves they will expect of us when they see us examining horses. Consequently, for us to be placed in the same category as horsemen, we must go about our animal as they themselves would, so that they may recognise us as being—what they boast of themselves—viz., practical men. If there are any additional ways of "going about" animals, we may make use of them, so long as they can be used without appearing awkward and out of place. The following are some of the general rules recommended for our guidance:—

1st. If possible, see the horse in the stable, and put it over from side to side in the stall or box.

2nd. Have both hocks sponged down on the inside, to place the hair smooth.

3rd. Have the horse led out, and walked and trotted from, towards, and past you, and view the action of the hocks, posteriorly, anteriorly, and in profile, as well detect any lameness, especially noticing the animal when turning.

4th. Place the animal on even ground with both hind limbs level, side by side, and look at the hocks from all points, and compare them with each other.

The best position for inspecting the most common seat of Spavin is, as Percivall says, "by the examiner standing by the side of the horse's (correspondent) fore limb," or by the side of the man placed in front of the horse's head, holding the left rein in his right hand, and the right in his left, near the bit. In this position the inner side of the hock may be traced by the eye, and compared with that of the other. Although this is the common position to detect Spavin, still, as we know that the enlargement does not always form here, the hocks must be viewed from the side for anterior enlargements, and from behind for elevations at

the posterior part. However, there are occasions when it may be necessary to take an anterior view of the two hocks at the same time ; this may be done by looking at them from the front, between the two fore-legs of the animal. Next, both hocks should be felt by the fingers, and compared with each other ; but this requires a little tact.

All veterinary surgeons do not use both of these methods for detecting Spavin ; some (Percivall, etc.) prefer their eyes, whilst others (Dick, etc.) depend upon their fingers. However, both methods are useful if properly acquired—the one for detecting unevenness and want of symmetry, the other for determining the nature of the enlargement.

There is no one symptom of the disease which may be said to be diagnostic of Spavin, except, perhaps, the bony enlargement itself of the infero-internal part of the hock ; but even this, as we shall see, is not infallible. We may have Spavin with or without lameness, and we have severe lameness without a vestige of an enlargement to be seen (occult Spavin). It is only when we consider the various symptoms, together with the exostosis, and the other parts of the limb, that we are enabled to conclude that Spavin is the cause of the lameness.

The abnormalities which may be mistaken for Spavin are :—

1. Enlargements on the inferior part of the internal aspect of the hock, due to (*a*) distension of the bursa situated at this part, (*b*) thickening and induration of the subcutaneous tissue and ligaments found here, (*c*) excessive development of the ridge of the cuneiform bones of the hock (coarse hocks), (*d*) inflammation of the skin at this part (œdematous), (*e*) thickening of the skin from the action of some previous irritant:

2. The "catching action" of the hock, when flexed, may be due to (*a*) Stringhalt (which may or may not be accompanied by Spavin), (*b*) a shortening of the fascia on the inner side of limb, producing a straddling, stiff action when the animal is first brought out of the stable, (*c*) shortening of the fascia on pelvis and femur, often seen in horses used for heavy work.

3. The toe of the hoof may be worn away from any malformation of the limb, or disease of other joints and tendons, which prevents the toe being raised from the ground.

4. It is often difficult to differentiate lameness produced by other causes when a fully-developed Spavin is present. Therefore, perhaps it will not be out of place for us to compare some of them :—

1. *Hip-Lameness* causes a stiffness of the whole limb ; the toe is dragged along the ground, and there is usually tenderness, heat, and swelling at the hip.

2. In *Patella Lameness*, the pain is greatest when the limb is extended and the foot cannot be brought forward.

3. In *Inflammation* of the true hock-joint (tibio-astragalean), there is swelling, pain on pressure, and heat, followed by shortening of the capsule, producing a stiffness of hock action, and it is often difficult to say which disease is the cause of pain when Spavin is also present.

4. Chronic inflammation of the sheath of the flexor pedis accessorius is not a very common disease, but, if present, it might cause some anxiety to the practitioner in deciding the seat of lameness. The history of the case might assist our diagnosis in such cases.

5. *Sprain of Flexor Tendon and Sheaths* would only cause a difficulty before the swelling and heat occurred.

6. *Ringbones* may present difficulties in diagnosis before the exostosis takes place.

Prognosis.—No one can give any opinion for certain about the usefulness of a horse with a spavin, because some horses with large spavins do lots of work and never go lame, whereas others with small "jacks" do light and easy work tolerably well, but will not stand a severe day's work without being very lame on the following day. However, as we (veterinary surgeons) have to give opinions upon this matter, it is as well we should be as unanimous as possible, and, for our guidance in future, I will ask you to make this one of the points of discussion to-day, and, with permission, I will suggest the following as a basis :—

1. *Age.*—Young horses are more liable to go lame with work than aged, but they are more amenable to treatment.

2. *Formation of Hock.*—Horses with naturally good-shaped hocks are more likely to get sound quickly, and remain so, than are the reverse.

3. *Position of Spavin.*—Those situated internally are less likely to interfere with the horse's usefulness than those situated anteriorly, but when situated at the posterior part of the internal surface of the hock, they rarely produce inconvenience for any length of time.

Then, again, "low spavins"—that is, those situated between the metacarpals and lower cuneiform bones,or between the two cuneiforms—are less likely to produce chronic lameness than "high spavins," or those implicating the large cuneiform and astragalus, and when the true hock joint is diseased there can be little hope of the lameness ever ceasing.

4. If the bony enlargement (Spavin) produces other diseases, such as contraction of suspensory ligament and chronic disease of the fetlock, or causes the foot to rotate on the ground, so that the animal can put the weight on the outside of the joint, our prognosis should be unfavourable.

5. Spavin accompanied with Stringhalt is detrimental.

6. Spavin is of less importance in horses with good constitutions, quiet temperaments, and good feeders, than it is in those with a spirited, nervous, and excitable temperament and light feeders.

7. *Work.*—Spavin is of more importance for fast and heavy work than it is for slow and light work.

8. *Shape and Make.*—Spavins are more favourable in well-made, compact, well ribbed-up horses than they are in leggy, long-barrelled, badly ribbed-up animals.

Treatment.—The first thing to endeavour to do is to allay the inflammation and pain. This is usually brought about by rest, physic, and local fomentations; and next to bring about complete anchylosis of the joint by counter-irritation.

Of all the means at our disposal for removing the pain of Spavin, *rest* is the most important. This alone will sometimes do all that is required, and without it no other method of treatment can be expected to be followed by any beneficial results.

As a matter of fact, the treatment of Spavin to-day is, as Percivall said in his time, "the very same as our forefathers employed with most success for the cure or relief of spavined horses."

We may here observe that Spavin has been said to be an incurable disease (Coleman), and when we define this term to mean a restoration of *structure* as well as *function*, it is true; but should we restrict the meaning of the word to the restoration of function alone, then we may say with truth that Spavin can be cured (Percivall), and, as experience teaches us, that when the joints are immovable this end is attained. It naturally forms a basis for treatment of Spavin.

Practically, then, we may divide the treatment of Spavin into two forms of counter-irritation, viz., firstly, applying irritant agents to the skin; and secondly, to operations.

The external irritant applications may again be divided into two kinds: (1) Vesicants; (2) Corrosive substances.

Vesicants are ointments, etc., of biniodide of mercury, iodine, iodide of potassium, cantharides, euphorbum tartarus stibiatus, bichromate of potash. They often destroy the hair follicles and leave bald patches.

Corrosive Substances are hydrarg. bichloridum dissolved in spirit or mixed with lard, and painted over the part; acidum arsenicum, ol. crotonis, acidum sulphuricum, but these always cause necrosis of the skin and blemish.

SURGICAL OPERATIONS consist in (1) placing caustics under the skin, (2) setons, (3) actual cautery, (4) chiselling the enlargement off the hock, (5) opening the bursa under the medial branch of the flexor metatarsi, (6) dividing the tendon of the flexor metatarsi on the inner side of the hock, (7) periosteotomy, (8) neurotomy.

1. Placing caustic substances under the skin appears to have been first introduced by W. Osmer in 1766, who used arsenic or corrosive sublimate made into a paste with gum arabic, and is still used by some at the present day.

2. *Setons.*—Professor Sewell appears to have been a great promoter of this kind of treatment, and Percivall says they are only useful for external or periosteal Spavin, the iron being best for articular Spavin.

3. *The actual cautery* may be used in various ways.

(*a*) *Distance Firing.*—By holding a hot iron a short distance from the skin, but not touch it so as to scorch, and not burn the skin.

(*b*) *Firing in lines*, drawn in various ways on the skin, sets up inflammation, varying in intensity according to the depth of the burn.

(*c*) *Puncturing* the exostosis with a hot needle-shaped iron was practised with success by W. Gibson in 1754. This may be followed by purulent Arthritis. Andral in 1851, and Hering in 1857, recommend piercing the exostosis with a hot nail or iron, and allowing it to cool in the wound.

4. *Chiselling off the bony enlargement* is rarely, if ever, attempted by modern practitioners.

5. Dieckerhoff has found opening the bursa situated upon the fan-shaped insertion branch of the tendinous portion of the flexor metatarsi, to be most successful. It causes inflammation, union of the walls, and destruction of the bursa. The inflammation is not, however, confined to the bursa, but extends to the fan-shaped branch of the tendon and ligaments below it, as well as to the periosteum and joint capsule, producing ossification (traumatic Spavin) and anchylosis of the small bones below. The first day after the bursa is opened, the swelling and infiltration are extensive, and a discharge flows from the wound, which afterwards becomes purulent, and the wound heals in about three weeks, but (like the callus of a fracture) it requires longer before ossification is complete.

There are two methods of operating:—

(*a*) *Opening the bursa with a knife.*—This is performed by placing the animal with the leg to be operated upon next a wall; put on a twitch, and let a man hold the horse's head. Another man is required to hold the leg farthest from the wall (that is, the outside one) backwards, as though he were going to shoe it (in many horses the fore-foot being held up is sufficient). The operator then takes an ordinary scalpel or castrating knife between his thumb and first and second fingers, presses his hand firmly on the lower part of the hock to steady it (in order to direct the knife and flex the fingers easily). He then makes a cut through the skin into the inferior part of the bursa, immediately under the insertion branch of the muscular portion of the flexor metatarsi, on the inner side of the hock, and withdraws the hand quickly to prevent the wound being extended too far by

the animal moving the limb. Should the wound not be large enough, a second incision may be made in the same manner. Dieckerhoff says he has cut straight through into the bone itself, and even into the joint capsule, without any dangerous consequences. The only thing to be careful of is not to open the saphena vein. If the inflammation is not sufficient, the next day a little tincture of iodine may be injected. Should granulations project too luxuriantly from the lips of the wound, apply the nitrate of silver or a decoction of cortex quercus. A cicatrix usually forms in about three weeks, and the animal is fit for work in about five or six. If the swelling is excessive, and does not disappear about the third week, apply some iodine ointment, or even the firing-iron.

(*b*) *The bursa may be opened with a pear-shaped hot iron*, but care must be taken not to burn deeper than the outer wall of the bursa; for, if the articular capsule is burned, it generally causes suppurative Arthritis; therefore the iron should be applied cautiously. This leaves a slight scar.

(6) *Division of the internal insertion branch of the muscular portion of the flexor metatarsi* (*tenotomy*) was first introduced by Lafosse. The following is a description of the operation, taken from the *Edinburgh Veterinary Review*, Vol. II., page 104:—"Believing that in the majority of cases of Spavin the cause of lameness is, if not entirely, at least chiefly, of a mechanical nature, and especially referable to the compression which the stretched inner head of the flexor metatarsi tendon exercises on the ossific tumour, thereby preventing relief of pain by allowing of its expansion, Professor Lafosse recommends section of the said tendinous insertion by a transverse incision, about three-quarters of an inch in length, behind the inner saphena vein, on a level with the lower border of the scaphoid. The results are in some cases immediate. Most frequently they only become apparent after a certain number of days, a difference not admitting of present explanation. In a great majority of cases, three weeks after the operation the lame horse is considerably relieved, if not cured, and sometimes the lameness disappears twenty-four to forty-eight hours after the operation."

Again, in Vol. IV. of the same journal, page 551, it says Jules

Mandel, V.S., Strasburg, had resort to Lafosse's operation, as a last resource, after having repeatedly fired without producing any beneficial effect. The horse was fit for work in a month after dividing the tendon.

7. *Periosteotomy.*—First advocated by Moulden for Spavin, but previously by Sewell for Splint; but it is useless unless the bursa is opened too (Dieckerhoff).

8. *Neurotomy.*—Professor Spooner introduced the division of the posterior tibial nerve before it divides into the internal and external plantars; but this has been repeated, as well as the division of the musculo-cutaneous nerve, without any benefit (Dieckerhoff).

Forensic Consideration of Spavin.—Dieckerhoff says "Spavin without lameness cannot be considered a rehibitory imperfection."

Percivall says, "Nothing is more common than to meet with horses—colts, even—who have what dealers call 'knots' in their spavin places, and the time was when such 'knots,' which have always been regarded as spavins, were certificated as constituting unsoundness. This was a professional decision which met with a good deal of opposition at the time, and justly so; and the result has been that such 'knots' are now allowed to pass as compatible with soundness."

Mr. Barlow's rule was that "if both hocks were alike, and the action good, joints coarsely formed should not be condemned as unsound, more particularly if the enlargements were situated towards their posterior aspect."

Williams, however, tells us that "many horses are foaled with irregular hocks, very often with one hock larger than the other, and such are apt to be condemned as being diseased and unsound"; and he goes on to say, "Experience, however, tells us that a young horse, rough in his hocks, if put to work before he has arrived at his full growth, is apt to fall lame, but if allowed to rest until old enough for work, he will remain sound." Again, a horse may have coarse hocks at four years old, or even look spavined, but at six years old the same hocks will appear fine and sound.

"Spavins in front of the hock are generally condemned, and justly so, but even when so situated one very often finds they cause no lameness.

"The lameness of Bone Spavin is, as a rule, removable in the young and middle-aged, but incurable (with few exceptions) in horses past their prime" (Williams).

Now, gentlemen, this is, perhaps, the most important part of all for you to discuss to-day. There is nothing which is so detrimental to a profession as to appear in courts of law, and give opinions which are contradictory, and anything but feasible and honest to ourselves or our clients; therefore, I shall be very pleased to hear your opinions upon this matter.

Personally, I consider we have no right to use the term "sound" unless an animal is free from disease, so far as we can judge; and I will put it to this meeting, for their consideration, whether it would not be better to restrict the term "sound," so far as the hock is concerned, to this definition. If the hock is diseased—that is, a spavin is present—and it is of such a size and in such a position that the examiner does not think the deformity will ever interfere with the animal's usefulness for certain purposes, then I think we are justified in using such terms as "practically," "usefully," or "workably" sound; and if we, as practitioners, would make up our minds to use these terms in this sense, I think a great deal of the unfairness which now exists between us would cease.

I am perfectly well aware that we cannot all see things with the same eyes, and practitioners will, from time to time, make mistakes. This is only human nature. But we can and ought to be unanimous about definitions of the terms used in certificates.

Supposing a horse to be spavined, although no lameness is present, we ought not to be able—as we appear now to be—to give a certificate of "soundness." I have known instances where a horse was examined by two veterinary surgeons: both agreed that the animal had Spavin, yet in one of the certificates the animal was described as "sound," in the other as "practically sound," simply because both considered the disease would stand work. The unfairness of this is obvious. A dealer could sell his horse with one certificate, but with the other he could not. Therefore, I hold that we ought not to write certificates of "soundness" when, in reality, we know we are not in a

position to say so. For instance, is there any gentleman in this room who could *guarantee* that any spavin would not produce lameness at some future time? If not, he has no right, in my opinion, to use the word "sound"; and I would even go further, and say that, if he could guarantee the horse standing work, he ought not to use the word "sound"; because a joint cannot be "sound" if it is diseased, although it may, in our opinion, be usefully so. However, if some such term as "practically sound" could be established, with a recognised definition, such as "practical soundness," meaning horses having a disease which, in the examiner's opinion, does not, and will not, in future, interfere with the animal's usefulness, it would be a great benefit to practitioners, not only in preventing such apparently opposite opinions, but also in lessening the number of cases which come into our courts of law to be settled.

Of course, having recognised terms and definitions would not make us all think and see alike, but, in my humble opinion, it would prevent two veterinary surgeons who did hold the same opinion from giving apparently opposite certificates.

Ought spavined horses to be used for breeding purposes?—That "like begets like" is a pretty well-founded maxim nowadays, and I think there are no men better able to demonstrate this fact than veterinary surgeons. As a basis for the discussion upon this point, I would point out to you what Professor Dieckerhoff has to say upon it. He says, "No horse with imperfect conformation of hock, whether affected with Spavin or not, should be bred from, because ill-constructed hocks predispose to disease."

On the other hand, animals with good health and structure of skeleton—*i.e.*, well-proportioned and good angles to their joints—may be used for breeding purposes, although Spavin is present, if the Spavin is known to have been produced by some external cause, such as sprain, etc. If, however, the disease was produced when young (during first or second year), without any known sufficient external causes, then such animals ought not to be bred from. In judging of this, therefore, we must take into consideration: (1). The structure of the bony frame generally; (2) The construction and condition of the hock; and (3) The constitution of the animal itself.

Gentlemen, I am afraid I have trespassed on your time too long already, but, in conclusion, I would ask you to give me your views upon any points you think I have not sufficiently touched upon, and especially would I ask your opinion upon :—

1. The value you place on the conformation of the hock, so far as the angle, size, and shape are concerned in predisposing it to Spavin—*i.e.*, the shape, etc., most susceptible to Spavin

2. The usual seat of the commencement of the disease.

3. The kind and situation of spavins you consider best for standing work.

4. Whether, in your opinion, spavins ever become absorbed?

5. Whether a horse with a spavin, whether lame or not, ought to be called "sound"?

6. Your views respecting the most rational methods of treating a horse (under various conditions) for Spavin.

7. Your views respecting the importance of Spavin for breeding animals.

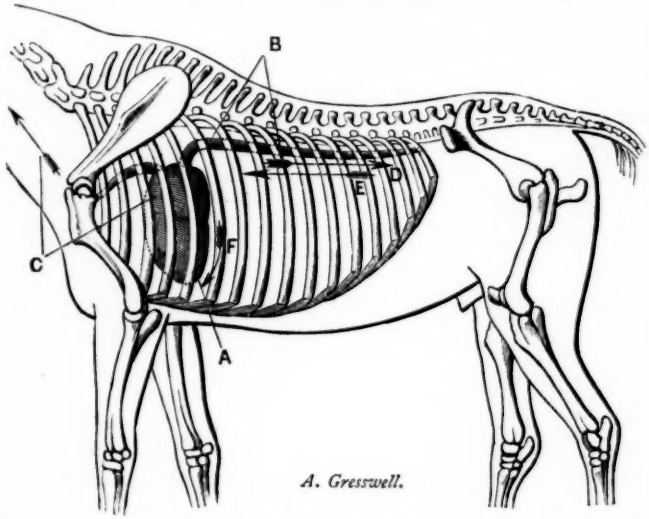
OBSERVATIONS ON CASES OF CARDIAC AND PERICARDIAC DISEASE IN HORSES, WHICH HAVE OCCURRED IN PRACTICE DURING THE PAST NINE MONTHS, WITH SPECIAL REFERENCE TO THEIR DIAGNOSIS AND ETIOLOGY.

BY A. SHAWCROSS, PUPIL TO MR. J. B. GRESSWELL, OF LOUTH.

THE fact that during the past nine months six cases of cardiac disease have occurred in the practice of Mr. J. B. Gresswell sufficiently proves that diseases of the main organ of circulation are common enough in the equine species, and their diagnosis, which was always to me a matter of some difficulty, is now, in many cases, at any rate, comparatively simple; for when once the natural sounds of the heart are clearly understood and recognised, there cannot be much difficulty in noticing murmurs or additional sounds. Of the six cases of which I am about to mention a few facts, two were due to overwork, two to poisons, one followed in a mare after foaling, and the last—one of Pericarditis—was a complication of Pleurisy. The first case of which

I may speak was one of double aortic disease, and in which both murmurs could be distinctly heard.

Their position of greatest intensity was as at B in the figure appended. This case was one of a six-year-old chestnut hunter, and was caused, in Mr. Gresswell's opinion, by the administration of some poison. The animal was taken ill, with several others in the same stud, some months previously, all had irregular, weak, feeble, fluttering pulses, but with the exception of this one they recovered gradually. This animal never regained strength, but still continued as bad as ever. It made but little improvement under treatment. The pulse was very variable in number and rhythm. It was about 60, but generally on slight exertion rose to 100 or 120.



Diagrammatic representation of the position of the heart in relation to the skeletal structures of the chest, and showing the position of greatest intensity of some cardiac murmurs in the horse, drawn up by Dr. A. Gresswell, B.A., M.B. Oxon., M.R.C.S.

A. Position of greatest intensity of mitral murmur (systolic).
B. Position of greatest intensity of aortic murmurs (systolic and diastolic).
C. Position of greatest intensity of tricuspid regurgitant murmur, and its propagation up the neck in pulmonary apoplexy.
D. Direction of propagation of aortic systolic murmur.
E. Direction of propagation of aortic diastolic murmur.
F. Direction of propagation of mitral murmur.

The second case was one of a seven-year-old harness mare belonging to a gentleman residing in the Wolds.

It was in all probability due to overwork. The murmur was very distinct, and the animal incapable of much exertion. It recovered under digitalis and iron, and afterwards of carbonate of ammonia and citrate of iron and ammonia. The next case was one traceable to arsenical poisoning; it made no improvement under treatment, and the autopsy revealed disease of the mitral orifice and endocardium of the left ventricle. The fourth case was one of a mare immediately after foaling, and was diagnosed as Endocarditis, which the autopsy confirmed. On examination the endocardium of both ventricles was found acutely inflamed.

The fifth case was one of Pericarditis in an aged cart-horse. This was a complication of Pleurisy, and gradually made a good recovery. It was attended by well-marked pericardial friction, which ceased when effusion began, and reappeared again when it subsided.

The last case was one of an old mare with dilatation and hypertrophy of the heart, due to over-exertion. It improved a little under tonic treatment, but is not fit for much exertion.

I recollect reading in the *Agricultural Gazette* some months ago that heart murmurs in the horse are difficult, *if not impossible*, to diagnose. Such statements by individuals, evidently ignorant of the subject, should be substantiated or left unsaid, and the diseases themselves should be studied.

OBSERVATIONS ON SOUNDNESS.

BY R. H. DYER, M.R.C.V.S., LIMERICK.

(*Continued from page* 250, *vol. xx.*)

THE latter portions of the observations in my former paper had reference most especially to man. In treating this subject, we must not lose sight of the situation of the eyes of the horse as contrasted with those of his master. The eyes of the horse are placed laterally, those of man anteriorly. We possess one advantage in being able to view very near objects which are

situated in front of us, but the advantage is a very small one. The horse has many advantages; he can take cognisance of objects both laterally and posteriorly with accuracy. This is to be accounted for from the fact of our eyes being anteriorly placed, and the eyes of the horse—as I said before—being situated laterally, together with the greater size of the globe in that animal. The eye of man, when compared with that of the horse, is, I should imagine, similar to a small telescope and a large one, both being complete in themselves, but the larger affording a greater field than the smaller. The way to ascertain the seeing powers of the horse is to aim a blow at the head when standing before him. It will be observed he will have some difficulty in warding it, and of judging of the distance it is from him; not so when standing by his side.

Shying is caused in most instances by imperfect vision, although the generality of horsemen believe it is a trick or habit acquired from idleness, and they refer it to playfulness, skittishness, etc. I am forced to believe, from much practical experience amongst young horses, as well as those more advanced in years, that in nineteen cases out of twenty the visual organ has not the power of perceiving things aright. There are several causes in operation to produce shying. I have known many—very many—horses, with narrow and flat foreheads, possessing small, ill-shaped eyes, desperate and dangerous shyers. The shape of the globe has not been convex, but I have found it more prominent at one part than at another; they are what I have termed "angularly convex." I have noticed a similar shaped eye in the bovine race. These horses are the worst shyers of any I have met with. They usually have a fancy for shying at water-marks on the road, especially after dark. There are eyes which are extremely prominent, and horses with eyes such as these must be very near-sighted; there are others with very flat globes, although said to be so from old age. I don't find such animals shy as they grow old, but the reverse. I am of opinion—as a general rule—if an eye is perfect in youth, and up to eight or twelve years old, the possessor of that eye will not become a shyer, as these animals are not often found so old as to have impaired vision. I have been acquainted with hundreds of old

horses that have not shyed in their old age. The shaped forehead to which allusion has been made has been seen in nervous and ill-tempered horses. When they are bad-tempered and shyers to boot, it becomes dangerous to ride or drive them.

They seem to make a point of starting at an object when there is difficulty in the way, which becomes very annoying. I am not aware of any writer having noticed this peculiarity. Doubtless many veterinarians have made similar observations. but I don't know of any such having been recorded. Shying may be considered to be one of the most unpleasant defects, and is frequently a dangerous practice. As veterinary examiners, we are not expected to make any remark about the shape of the eyes or the shying propensities of horses when brought for inspection. This subject, however, demands our special attention. Shying is usually classed as a "vice," and the question of vice does not, *as yet*, fall within the province of examiners as to soundness, to dwell upon, but I think, if the eye were better understood, we ought to be called upon to state whether such eyes as have been described should be considered sound ones. I know of no portion of our professional duties which require so strict an investigation as that of the visual organs. Who can tell what accidents happen from riding or driving shyers? I think I could name several which owed their origin to defective sight. In giving an opinion as to soundness, we ought to be called upon to speak as to the probability of an animal which may be under examination being free from vice in this respect. I say vice, because it is known by that name, not that I can recognise the name as a correct designation of shying. I am inclined to the opinion that an animal found to be a shyer is indeed unsound, although it has been held by some great authorities that if an animal has been formed in a certain manner it does not constitute unsoundness. "Provided this peculiarity does not interfere with the natural usefulness of the animal, then it may be said he is sound." But if that peculiar formation of parts can be proved to exert a powerful influence in the carrying on the function of those parts, whereby they are materially impaired, then I think it amounts to unsoundness. "Youatt," at page 133 in his work, when writing upon

the subject "Shying," says, "There is a shying often the result of cowardice, or playfulness, or want of work, but at other times proving beyond contradiction a defect of sight even more dangerous than blindness—a loss of convexity in the eye, lessening the convergency of the rays, and throwing the perfect image beyond, and not on the retina. There is a striking difference in the convexity of the cornea of the colt and the old horse; and both of them, probably, may shy from opposite causes—the one from a cornea too prominent, and the other from being too flat. In the usual examination of the horse previously to purchase, sufficient attention is not always paid to the convexity of the cornea." Here, then, it will be seen that this acute observer has drawn attention to one cause. At pages 453 and 4 he treats largely upon this habit. His remarks, together with those of the late John Laurence and Mr. Castley, seem to lead us to the belief that almost all cases of shying are produced by play, skittishness, or fear, etc. The anecdote found at page 455 is very interesting, but it does not explain anything. I could, if time permitted, relate several instances of horses disliking to enter a stable. I have had personally to superintend the getting of them into their places, and believed at the same time I could easily solve the mystery by an examination of the head and eyes. By closing one eye, it is known that man is capable of seeing about two-thirds of the objects which he can when both eyes are in action. A horse similarly circumstanced, I should imagine, labours under an equal disadvantage. It may be profitable to bear this in mind in order to test its accuracy.

Having a professional visit to make some time ago in the country, I was requested to examine a four-year-old entire colt with regard to his eyes. Finding Capsular Cataract in both, the owner of the horse became deeply interested, and inviting me to partake of his hospitality, he put a series of questions relative to eye diseases generally, after which he introduced me to his son, who was suffering from an attack of Keratitis, and consequently unable to distinguish any object; which had existed for many months. His case was replete with interest, inasmuch as we, as *veterinarians*, are not often consulted upon such cases as that alluded

to. It may not be generally known that in Ireland there are more blind persons, in proportion to the population, than in any other country in the world, save one, which, I believe, is Siberia, I have not any statistical accounts prepared in reference to blindness in the horse, but I am convinced the same thing existed in the horse at the date these observations first were published. A few years before this, accounts were published as to the number of persons totally blind in Ireland; and there were at that time, if memory serves me rightly, about *from seven to eight thousand in a state of darkness.* Few persons will be inclined to believe such a startling fact. It is not known how many individuals suffer from the loss of one eye only. If such information could be obtained, it would present a truly melancholy picture indeed. My observations with regard to horses leads me to the conclusion that, for some years past, there are fewer horses with affections of the eyes than formerly, and this is owing to the better ventilation of stables, etc., and the absence of "sires" who were partially blind. This latter remark will show, without doubt, that eye diseases are, some of them, of an hereditary character.

(To be continued.)

THE INFLUENCE OF HEREDITY AND CONTAGION ON THE PROPAGATION OF TUBERCULOSIS.

(Continued from page 94.)

However, public opinion begins to be interested in this question. The conviction that the consumption of the flesh and milk of phthisical cattle constitutes a veritable danger, which conviction at present is only held by a portion of the public, is gradually penetrating society, and daily gaining ground. It will follow, therefore, that ere long a sure guarantee will be demanded from the State against the permanent danger incurred from this disease in bovines, and pressure will be brought to bear on public administrations to compel them to adopt the necessary measures. Unfortunately, in having recourse to the opinion of competent persons, governments will have to contend with the indecision of these, and stand before hesitating opinions; consequently, they

will give up attempting to devise measures, and throw upon the undecided scientists or practitioners the heavy responsibility of an eventual calamity.

The Sanitary Commission of Gotha expressed itself on this subject in the following terms: "With regard to the consumption of the flesh of tuberculous cattle, the Commission has not yet arrived at a definite opinion, for the reason that competent persons are not agreed, or are at least somewhat in doubt, as to this matter. It has been established as a fact that by the use of this flesh Tuberculosis may be transmitted; it is not overlooked that the gastric juice does not always destroy the tubercle contagium, and that cooking is not a certain or sufficient procedure for the destruction of the virus, unless the flesh is kept for hours at the boiling point; it is also known that a microscopical examination of the flesh, such as is made with trichinous flesh, allows the existence of the disease to be ascertained (?). Does it not seem, from all these circumstances, that there should be no doubt as to whether such flesh is or is not admissible as human food? It is very singular that there should be any scruple in condemning this, merely because the prohibition of its use may somewhat damage the pecuniary interests of certain persons!"

Reproaches similar to the above will certainly be multiplied, if veterinary surgeons do not decide to frankly declare, without consideration for the interests they are not called upon to defend, that the flesh and milk of tuberculous animals should not be allowed for human food, and if they do not indicate the ways and means by which the necessary measures may be applied in a form satisfactory to the generality.

The Organising Committee of the International Veterinary Congress has recognised the urgency of a solution of this question, by including Tuberculosis among the *tractanda*. The Congress cannot refrain from the task of arriving at a practical solution of this question, if only *in nuce;* as the propositions which have already been put forward up to the present time are insufficient for the attainment of this object.

We have seen that the source of contagion in tuberculous animals can neither be completely diverted nor altogether exhausted, because the control of the flesh and milk supply is sur-

rounded with so many insurmountable difficulties as soon as these articles are disposed for sale, and also because a permanent surveillance of cattle, with the concurrence of the owners, does not afford a guaranty commensurate with the gravity of the danger.

It remains, then, to inquire if the police measures applied to the contagious maladies might not furnish us with the means of completely drying up the sources of the disease; but in selecting these measures, we should not lose sight of the fact that it is more especially by the association of the private interests of the cattle-owner with the public interests—that is to say, with the willing assistance of all proprietors of stock—that we shall the more readily attain the proposed object.

In pursuing the latter course, we find ourselves at home; for we are placing ourselves in the real domain of veterinary medicine and veterinary sanitary police. In this domain contradictions and disputations are less to be feared, and they should not be so protracted as with sanitary police, properly speaking.

Tubercular Phthisis is, as has been already said, a disease which is transmissible by heredity and contagion; it is very prevalent among warm-blooded animals which live in proximity to man. No other malady so well merits the designation of *Universal Panzoöty*, or "World-plague" (*Weltseuche*).

It is demonstrated, on the one side, that this malady is only propagated by a well-determined contagium, elaborated by animals affected with it; on the other side, it is admitted in principle, in modern sanitary police laws, that the contagious diseases of our domesticated animals, when they are incurable and fatal, should be combated by isolation, slaughter, removal of the sick or suspected, as well as by the disinfection of the places occupied by these animals. In the presence of these two facts, we should no longer hesitate to adopt, with regard to this malady, analogous measures to those prescribed for these other contagious diseases. Some careful, experienced, and intelligent breeders have for years so acted, that instead of putting away tuberculous animals, so that they might no longer do mischief, they have sold them or sent them to the butcher; instead of diminishing the injurious influence of such animals, they have rather favoured it; they purified their own stables by infecting those of their neighbours.

There is no reason why Tuberculosis should not be included among the maladies which must be combated by sanitary police measures. The majority of farmers, by a careful and prolonged examination of their animals, are able to recognise the manifestations which denote the existence of this disease, or lead to suspicion of its presence; we might, therefore, render the *declaration* of this malady obligatory.

The veterinary surgeon can also, in the majority of cases, and during the life of the animal, recognise or suspect the existence of the affection. The diagnosis may, in every instance, be positively established when recourse is had to an autopsy. Besides, nearly all the sanitary police laws have provided for the slaughter and autopsy of suspected animals, with a view to the confirmation of the diagnosis in cases of epizoötic diseases. We might, therefore, in order to save time, get to know, in a given case, up to what point suspicions as to the existence of the disease are or are not justified.

As with Glanders, we should, when dealing with Tuberculosis, look for the appearance of new cases in cowsheds where one animal has shown symptoms of it; these are most likely to be animals related to it by parentage, or standing beside it. It is therefore possible to recognise in good time the suspicious animals.

As soon as Tuberculosis has been recognised among the inhabitants of a cowshed, the suspected animals should be got rid of as soon as possible, and the stalls and other places cleansed and disinfected, as well as the utensils which have served to hold their food and drink, and the articles of grooming and equipment. It would even be desirable to disinfect the clothes of the persons who have been more or less in contact with the diseased or suspected animals.

If the number of cattle is considerable in a shed, a herd, or a farm, it would be best to remove from these places those which do not manifest any suspicious symptoms; those affected, as well as those suspected, should be immediately sacrificed on the spot, or in an adjoining abattoir, or after being fattened for a few weeks. After getting rid of all the diseased or suspected, measures of cleansing and disinfection of the sheds, utensils, etc., should be resorted to.

In the introduction to the present work, we have shown that Tuberculosis is most frequent among bovines, that the other domestic animals, and especially pigs, are less disposed to contract the disease, and that they probably receive its germs through the intervention of affected cattle. As there is no need to apply such severe measures as in the cases in which we have to combat a grave disorder, we may limit their employment to the instances in which it is necessary to stamp out the disease in the *bovine species*, no matter in what form it appears. A limited application of the same measures may be made in cases in which the malady is developing in the other domestic animals capable of contracting it; though it is to be observed that the extinction of the disorder among the bovines will probably lead to its disappearance in other animals. It would, however, be desirable that the local police authorities should have the right to apply measures analogous to those mentioned to the disease affecting other than bovines (especially pigs), if it should extend and assume sufficient importance to justify them.

The flesh and milk of tuberculous animals, whatever may be the species of these, should not be allowed to be consumed as food, and any infraction of this prohibition should be punishable.

It is true that the application of the proposed measures, maintained until the disease had completely disappeared, would cause heavy loss to the breeders and feeders of stock. The farmers would, for this reason, endeavour to evade these measures, and this evasion would be all the easier from the chronic and occult nature of the disorder. Supposing that recourse be had to these measures, they would only have the desired effect if their application was supplemented by another arrangement, which is also resorted to in certain countries, and yields satisfactory results—this, is *awarding an indemnity* to the owners whose cattle are sacrificed. This award is perfectly justifiable in this instance. The cattle-owner, left to his own efforts, is not in a position to preserve his property from an invasion of Tuberculosis. If his stock is decimated by the malady, it is not he who has been knowingly the cause of the accident; so that, in compelling him to get rid of his animals without compensation, we are imposing on him a more or less heavy sacrifice for the benefit of all, so far

as the preservation of the health of mankind and the public wealth is concerned; and if he has to submit to such a sacrifice for the general good, then it is the duty of society to repair the loss he sustains, either wholly or partially.

Compensation is the price which a community owes to an individual (the owner of cattle in this instance) for his share in the struggle against a general danger; it is this indemnity which combines and concentrates the efforts of isolated individuals and of society into one mode of action—two groups of forces, which, without this bond, would remain hostile to each other. The equity of these principles no one can contest.

Conformably with the general principles which ought to regulate the distribution of indemnities in case of losses from contagious maladies, a portion of the loss which he has incurred should fall upon the owner of the cattle, as one-third or one-fourth. This is a means employed by society to ensure the vigilant and interested surveillance of the owner, for the preservation of his stock. Full compensation should not be awarded except for those animals which have been slaughtered and found free from disease on an autopsy being made; but in such an instance as that in which partial compensation is granted, the sum realised by the sale of the carcase should be deducted from the total amount. There would, therefore, be nothing more to pay for the slaughter of a healthy animal than the difference between the value of the flesh and the entire carcase on the one hand, and the price of the living animal on the other.

In order to prevent excessive demands, the maximum amount of compensation should be legally fixed, beyond which the indemnity should not go.

Looking to the insidious course sometimes assumed by diseases for which compensation is allowed, it is advisable to give it not only for animals which have died or been killed by order, in consequence of a regular declaration, but also for those sold to the butcher, and in which the disease has been found after slaughter. This latter measure at the same time constitutes an excellent means of preventing the sale of tuberculous animals. Compensation should in these cases be considered as a reward for allowing the disease to be discovered in carcases intended for

food, and it constitutes a much better means of preventing the clandestine sale of such flesh than the most severe administrative control of the butcher's trade, with the slaughter and the more or less heavy penalties prescribed by law. The awarding of compensation fills up a *hiatus* which has remained up to the present time in the system of meat inspection, and the existence of which explains the insufficiency of the results hitherto obtained with respect to the flesh of tuberculous animals. It does not matter to whom compensation is made—whether to the butcher, the cattle-dealer, farmer, or grazier—it always has, as a consequence, the relieving of the competent expert from the solicitations of interested parties, and enables him to give an impartial judgment—all that the inspector should have in view when endeavouring to protect the health of the consumer.

The practice of seizure has been abandoned, after existing for centuries past, and the reason for this, in our opinion, is to be found in the absence of compensation. Medical men, such as Heine, Graumann, and others, who in this matter were only acting for other particularly interested persons, have been followed by intelligent persons, who have gradually won over public opinion to their cause.

It is for this reason that, now-a-days, a number of veterinary surgeons cling to the idea that the flesh of tuberculous cattle is injurious, and yet cannot categorically express their opinion as to the necessity for excluding the flesh and milk of such animals from consumption.

The granting of compensation would, however, not of itself dissipate the arguments which the cattle-owners and butchers, inspired by their private interests, oppose to the application of a sanitary measure the utility of which is indisputable, but yet it would facilitate the inspection of meat in each particular case. Compensation would not only have the effect of revealing the greatest possible number of cases of Tuberculosis, but it would also allow the veterinary surgeon to certify to every one of these cases. The veterinary surgeon, who is alone competent, could then determine how far the flesh might be allowed for consumption, and would not be importuned in one or other sense; he could be sufficiently strict to reject as unfit for food the flesh

which he might consider dangerous. If these measures were adopted, it would be seen that the cattle-owners would not seek to utilise the food admitted for consumption, and that the majority of the public would no longer buy the flesh of tuberculous cattle as good food.

With regard to the question as to what is the material loss caused by Tuberculosis, this may be differently looked at and differently decided.

If we consider that the measures which should preserve the inhabitants of a country from the injurious effects of some general noxious cause—and the disease under consideration comes under this head—devolve on the State, it appears beyond doubt that the State should take this loss in hand by awarding compensation to those whose claims to it are made good.

In those large States which are divided into provinces, districts, etc., this charge might be imposed on counties and central administrations. If, on the contrary, it is taken into account that the flesh and milk sold by cattle-owners constitutes, in special instances, a real danger for the consumer; that it is certainly the interest of these owners to take the necessary measures to protect their animals from this grave cause of incessant losses; and that the compensation allowed them for cattle slaughtered because of the disease; then we are naturally brought to the conclusion that the realisation of the funds for compensation should fall, in the first instance, upon these cattle-owners.

In fact, the first effect of the stamping out of Tuberculosis would be to free cattle-owners from a heavy burden, the getting rid of a danger to the public health being here only of secondary importance. Besides, it is only right that every owner should assist in the creation of a fund required to successfully combat panzoötic diseases, and to arrest or diminish their destructive influence as much as possible; and they should also have a real interest in ensuring the prompt and thorough execution of the measures recognised as necessary to prevent the losses these maladies occasion.

In decreeing as obligatory on the proprietors of cattle, the adoption of the system of insurance against losses due to Tuber-

culosis, the State would fulfil all its obligations with regard to those whom it governs. It would then be necessary to combine into an Obligatory Insurance Association all the cattle-owners of a country, county, or district; and if it were decided to extend compensation to the butchers, these also should participate in the contributions to, and advantages derived from, the Association.

In countries where warranty laws (*lois sur la redhibition*) exist, and where Tuberculosis is classed among the maladies recognised by these laws, the right to compensation may be extended to the butchers.

Obligatory insurance, such as we have suggested, would require an annual census of cattle. This is already obtained in the majority of the German States; it is made annually by the local administrations on a day fixed for the purpose. The census return is posted up for fourteen days after it has been completed, in order to give people who are interested the necessary time to correct any errors they may discover, and eventually to insert all the corrections deemed necessary. The returns are finally sent to the receivers of contributions, who collect the proportion each cattle-owner has to pay, according to the number of cattle he possesses.

By this means, in the Grand Duchy of Baden in 1879 and in 1881, there was collected a sum of five pfennigs for each head of cattle, in order to provide a fund to compensate for the losses caused in 1879, 1880, and 1881 by Contagious Pleuro-pneumonia and Anthrax.

There is no occasion to insist further on the details relative to the system of compensation proposed, because of the very diverse organisation of the different States, and the varied exigencies which are the consequence.

It should be observed, however, that if these measures cannot be introduced in a general and simultaneous manner, the countries which adopt them would be compelled to guarantee themselves against the others, by deciding that compensation would only be given to the cattle-owners who could prove that animals recognised as diseased had been in the country for at least a year.

The idea of combating Tuberculosis by sanitary police measures and by obligatory insurance, at one and the same time, is not new. The Central Committee of the Agricultural Society of the Grand Duchy of Baden, at its meeting in 1882, addressed a petition to the Government, with the view of obtaining permission to present to the Chambers the draft of a Bill, rendering it compulsory for all cattle-owners to establish a system of mutual insurance against the losses caused by this scourge.

In 1881 the Badenoise Veterinary Society, at its seventeenth general meeting, voted the following resolution: "The meeting is of opinion that it is urgently necessary to institute a mutual insurance association among stock-owners, because of the losses caused by diseases which are neither the consequences of grave hygienic neglect nor crass ignorance."

When the same subject was discussed at a meeting of the Upper Chamber on May 16th, 1882, Count Von Berlichingen spoke as follows:—"The ninth point to which I desire to draw your attention has for its object an extension of the law with regard to veterinary sanitary police. I have observed with satisfaction, that within the last few years the Grand-Ducal Government of Baden has been more actively engaged in improving agriculture and assisting it in one way or another. The law on sanitary police more especially has had favourable consequences in this direction. As for ourselves, we have been for a long time seeking for means by which to avert ruin from the poor people who have the misfortune to lose their cattle; for we know, from experience, that very often the loss of their animals has been the origin of ruinous debts to which the brave toilers have succumbed. If a farmer loses a cow he has to buy another, and he has frequently to borrow the money at heavy interest to pay for it, or obtain it on oppressive credit; once in the hands of the usurer, his ruin is nearly always consummated. Our reflections on this subject have brought us to the conclusion that it would be useful, as has been already said, to institute by law, obligatory and reciprocal insurance among stock-owners, against all the accidents to which the domesticated animals are liable. The draft which was drawn up with this view was submitted to the agricultural societies of the different

districts. Nearly every one of these gave a special opinion, but the majority were unfavourable to the establishment of compulsory assurance. We admit that a good number of arguments may be brought against such a project, and we do not wish to say all we now think of it.

"The idea will be realised, we doubt not, but such a conception must be well considered and discussed before the majority of the public will recognise how correct and just it is. In any case, the domain of the law of sanitary police should be enlarged, and I am convinced that the Minister of State, as well as our honourable reporter, will entertain the opinion I hold, that this law is not yet perfect. To prove this, I need only direct your attention to the tubercular disease and Tubercular Phthisis. I am firmly convinced that if the women in our towns knew the danger they incurred by pouring into their coffee milk from a tuberculous cow, we should immediately be crushed beneath an avalanche of petitions. The well-established fact that the use of such milk may produce Tubercular Phthisis, amply justifies a panic of this kind. The large owner who possesses a considerable number of cattle, soon notices when one of these commences to be affected with Tuberculosis, and loses no time in getting rid of the lot; these then pass from hand to hand, until at length they reach the small farmers, who, in buying them, think they have got good bargains; but before long they find out their mistake in the damage, or even ruin, they have to submit to.

"In ordering the burial of unhealthy flesh, because of this disease, we preserve hundreds of people from disease, while the poor people whose property we have seized are the only sufferers —they receive no compensation. We should like to see an order that all animals affected with Tuberculosis be slaughtered and their flesh buried; but we should also desire to see the owners indemnified for the loss imposed on them.

"We are, lastly, of opinion that an indemnity should even be given for all meat seized and buried; in the present state of the law this is very often not accorded.

"I have confined myself to these few indications, in support of which it would be easy to show you numerous letters and

complaints, but I do not wish to occupy your time with these."

In the Grand Duchy of Baden it is not only sought to institute repressive measures against Tuberculosis, but the authorities are much occupied in studying the practical means wherewith to oppose it. The central bureau of the Agricultural Society has charged the veterinary surgeon of the country (*Landesthierarzt*) to calculate how much money it would require, in the way of contributions from the cattle-owners, to raise a sum sufficient to cover *all* the losses among cattle, resulting from necessary slaughter or natural death.

As the system we have proposed, in order to arrive at a practical solution of this question, is of general interest, but at the same time presents an altogether special interest with regard to the question, we shall here reproduce all the calculations to which we have had recourse with this object in view.

By this calculation we have endeavoured to ascertain :—

(*a*) The number of cattle in the country ;

(*b*) Their average value ;

(*c*) The number of animals lost every year ;

(*d*) The sum total of losses, and the average value of each animal sacrificed ;

(*e*) The importance of the danger incurred by cattle in different parts of the country.

These primary questions being more or less exactly solved, it remains to find what tax would be required to be paid by the cattle-owners to create a fund from which all the damage sustained in the course of a year, from the loss of cattle and destruction of meat, might be covered. It would also be necessary to determine if there was any reason, if such a fund was instituted, to create a unique contribution of so much per head of cattle, as is done in assurance societies against epizoötic diseases ; or to decree a differential tax, dependent on the real value of each animal, and the danger of loss inherent in the locality where the animal is kept. The first of these two alternatives appears to us the best, as it better facilitates the practical success of compulsory assurance, which would again considerably assist in its effects the mode of assurance already existing.

In order to respond to the above questions, we were compelled

to depend upon facts collected during the course of several years, and obtained from the best sources.

The information of which we availed ourselves was derived from official sources, particularly from :—

(*a*) The publications of the statistical *bureau*, which give every year the result of the census of cattle (years 1867 to 1879).

(*b*) The annual reports of the district veterinary surgeons of the Grand Duchy of Baden (1872 to 1879) ; these documents are first submitted to the district administrations, then forwarded to the Minister of the Interior, who sends them to the technical reporter, who prepares a *résumé* of them.

(*c*) Special information obtained direct from the veterinary surgeons by the Minister of the Interior (1876 to 1879).

(*d*) The abstracts of prices of cattle sold at the markets, and those of butchers' meat, published in the weekly agricultural journal and in official publications (1866 to 1879).

(*e*) The abstracts of excise, the amount of which is published annually by the general direction of contributions of the Grand Duchy of Baden (1832 to 1879).

(*f*) The abstracts prepared by the court of accountants, relative to the money paid as compensation by the Treasury for animals slaughtered by the police, or because of Contagious Pleuro-pneumonia or Anthrax (1879).

(*g*) The abstracts of accounts of several insurance societies against the losses in cattle in several parts of the country (several years between 1868 to 1879).

The *quantity* of this information is sufficient to allow of a sufficiently precise conclusion to be drawn, and to solve the questions asked above, as it belongs to a period during which numerous modifications and alterations occurred in the cattle trade. These modifications and alterations have been the cause of considerable variations in the numerical importance of the bovine population, in the value of each head of cattle, as well as in the mortality occurring among the cattle in the course of this somewhat long period.

With regard to the *quality* of this information, we believe—even without taking into account the value of the sources whence

it has been derived—that it can be accepted with as much confidence as such information deserves. Notwithstanding the difference of the sources, the conclusions arrived at are in harmony; they are evidently rational, and not in opposition to the facts.

These preliminaries being established, we may proceed to examine the questions already propounded. The *first* is concerning *the importance of the bovine population* in the Grand Duchy of Baden. From an examination of the documents mentioned, the number of cattle has been :—

In 1872, 621,888;	In 1876, 568,046;
„ 1873, 660,405;	„ 1877, 590,158;
„ 1874, 654,846;	„ 1878, 648,732;
„ 1875, 626,026;	„ 1879, 665,729.

The annual average during this period has therefore been 629,435 cattle.

The *second* point is the *average value* of each head of cattle. To solve this question, it was at first necessary to establish the average price of cattle in different parts of the country; the highest and the lowest prices of calves, heifers, steers, cows, and oxen have been calculated, and then valued in lots of a hundred, made up in such a way as to represent, in the proportion between the number of different animals composing it, somewhat the proportions usually found in the entire bovine population. The value thus calculated gives the average price of one animal.

Among a hundred cattle in the Grand Duchy of Baden, there is an average of seven calves, twenty-three heifers or steers, fifty-one cows, ten bulls, and nine oxen.

To calculate the respective value of these animals, the average price of the following markets is taken: Messkirch, Donaueschiregen, de Bretten, Eppingen, Adelsheim, Schönau, Ettlingen, and Boxberg. The results are as follows:—

Cattle of Messkirch and Neighbourhood.

	Price of Animals.	Total Value of a Lot of 100 Cattle.	Total Average No. per cent.
Calves	... 40 to 120 marks*...	280 to 840 marks	... 7 calves
Heifers	... 200 „ 400 „	... 4,600 „ 6,900 „	... 23 heifers
Cows	... 250 „ 400 „	... 12,750 „ 20,400 „	... 51 cows
Bulls	... 150 „ 400 „	... 1,500 „ 4,000 „	... 20 bulls
Oxen	... 400 „ 500 „	... 3,600 „ 4,500 „	... 9 oxen
		22,730 to 36,640 marks.	100 cattle.

Maximum and minimum averages, 366 to 227 marks.
Average value of each animal, 297 marks.

* The mark is equal to a shilling.

Neckar Breed.

	Price of Animals.	Total Value of a Lot of 100 Cattle.	Total Average No. per cent.
Calves	30 to 35 marks	210 to 245 marks	7 calves
Heifers	200 „ 250 „	4,600 „ 5,750 „	23 heifers
Cows	150 „ 300 „	7,650 „ 15,300 „	51 cows
Bulls	250 „ 300 „	2,500 „ 3,000 „	10 bulls
Oxen	400 „ 500 „	3,600 „ 4,500 „	9 oxen
		18,560 to 28,795 marks.	100 cattle.

Maximum and minimum averages, 287 to 185 marks.
Average value of each animal, 237 marks.

Baar Breed.

	Price of Animals.	Total value of a Lot of 100 Cattle.	Total average No. per cent.
Calves	30 to 60 marks	210 to 420 marks	7 calves
Heifers	200 „ 350 „	4,600 „ 8,050 „	23 heifers
Cows	200 „ 400 „	10,200 „ 20,400 „	51 cows
Bulls	150 „ 300 „	1,500 „ 3,000 „	10 bulls
Oxen	250 „ 500 „	2,250 „ 4,500 „	9 oxen
		18,760 to 36,370 marks	100 cattle.

Maximum and minimum averages, 364 to 188 marks.
Average value of each animal, 267 marks.

Forest Breed.

	Price of Animals.	Total value of a Lot of 100 Cattle.	Total average No. of Animals.
Calves	20 marks	140 marks	7 calves
Heifers	120 „	2,760 „	23 heifers
Cows	150 „	7,650 „	51 cows
Bulls	180 „	1,800 „	10 bulls
Oxen	300 „	2,700 „	9 oxen
		15,050 marks	100 cattle.

Average value of each animal, 151 marks.

Odenwald Breed.

	Price of Animals.	Total value of a Lot of 100 Cattle.	Total average No. of Animals.
Calves	18 marks	126 marks	7 calves
Heifers	120 „	2,760 „	23 heifers
Cows	140 „	7,140 „	51 cows
Bulls	170 „	1,700 „	10 bulls
Oxen	320 „	2,880 „	9 oxen
		14,606 marks	100 cattle.

Average value of each animal, 146 marks.

(*To be continued.*)

Editorial.

THE NATIONAL VETERINARY ASSOCIATION.

THE third general meeting of this Association was held at Birmingham, on the 4th and 5th of August, under the presidency of Harry Olver, F.R.C.V.S., Tamworth, and appears to have been in every respect a great success. It could scarcely be otherwise, so far as the efforts of the secretaries and others who had to do with its organisation and the preliminary preparations could secure such a consummation. This gratifying result was much enhanced by the address of welcome given to the meeting by Mr. Sampson Gamgee, President of the Midland Medical Institute, in whose rooms the meeting was held; himself a member of the veterinary profession, as well as a distinguished surgeon, he could cordially sympathise with the object of the assembly, inasmuch as he confessed to the pleasure it gave him to look back to his studies in veterinary medicine, and the satisfaction which the opportunity afforded of welcoming its practitioners, and of meeting some of his old friends and fellow-students. To his and to his colleagues' warm sympathy and assistance the occasion was undoubtedly rendered more profitable and enjoyable.

The General Secretary's Report shows that the Association is progressing shamefully slow, the number of new members elected during the past year being about forty-five, and this addition only brings the total number of members up to two hundred and sixty-four. This, in a profession which numbers nearly three thousand members, is not very creditable, and it must be confessed that, comparing ours with the medical profession, and the meetings of the British Medical Association, it would seem as if we took but little interest in our own welfare and advancement. Considering the amount of good such an Association is likely to confer, not only upon individuals, but upon the entire body, if its objects are properly carried out, it is very surprising that it should not at least muster five hundred enthusiastic supporters, who would vie with each other in bringing forward important subjects for discussion, and do their utmost to shed light where obscurity now prevails, by contributing their observations and experience, and comparing these with those of others. We earnestly hope that before another meeting takes place, the register of members will show the present number trebled, and a lively competition aroused as to who shall have the privilege of contributing papers. Such an Association as this well deserves the countenance and support of every one who cares for progression and unity; not only should it afford opportunity for the promulgation of new facts and ideas with regard to medicine and surgery, the best means for protecting the domesticated animals from disease, and increasing their value to man, or enunciating opinions with regard to professional ethics, or politics, but it should also afford encouragement and assistance—pecuniary or otherwise—to those among us who are desirous of undertaking researches in physiology and pathology, or rewarding those who have done good work in the service of the profession. Such an Asso-

ciation has a wide and cheering prospect before it, as the more accessions it gains in its ranks, so the more surely and completely will its objects be achieved.

We hope to commence the publication of the report of the late meeting in our next issue, as it has not come to hand in time to appear in the present number; while in the meantime we must congratulate the President, secretaries, office-bearers, and members on the success attending the third meeting, while it is to be hoped that its next assembly in the Scottish capital will be even more successful, and witness a crowd of newly-enrolled colleagues, as well as a full muster of its older supporters.

NOTES ON A SHORT PROFESSIONAL TOUR IN BRITISH BURMA.

BY JOHN HENRY STEEL, V.S., A.V.D., BOMBAY.

IT may be interesting to the readers of the VETERINARY JOURNAL to hear what professional matters specially attract attention in this most interesting portion of the British Empire in the East. The more will this be the case, since in climatic conditions British Burma differs very considerably from British India; it is inhabited by very different races of men and animals, and presents special geological and hydrographical features. The following notes were made during a cold weather tour of five months' duration; they are necessarily, therefore, rather of the nature of "first impressions," and so must be accepted as open to correction. But few members of the profession are in a position to express opinions on Burma from practical experience. The only veterinary officer stationed there is Veterinary Surgeon (1st Class) R. J. Frost, A.V.D., who has held the post of veterinary instructor in the province for some time. To his teaching duties have always been added the advising of the provincial Government on veterinary matters, and the adoption of measures for the detection and repression of communicable disorders among country cattle. Some nine or ten years ago, the necessity for some civil veterinary agency was so obtruded on the local Government by the enormous losses of cattle which impoverished the Burman people, that the supreme Government was requested to place the services of a military veterinary surgeon at the disposal of the British Burma authorities. Mr. S. R. Sartin was first appointed, but after a time resigned, as certain promises made to him by the then Chief Commissioner were not acknowledged nor acted on. When that officer was transferred to other duties, Veterinary Surgeon Frost was then appointed to succeed to the post of veterinary instructor, and has met with success in the performance of his duties most gratifying to Government, as has been repeatedly acknowledged. The Burma Government seems to be not only gratified but astonished that Mr. Frost has succeeded in turning out useful native practitioners. The Burmese differs, as regards medical education, very much from most natives of India. He is apathetic and careless, so that he rarely settles down steadily to medical studies. It has been found that, although smart and intelligent, he lacks the perseverance essential to continuous and solid study, and several attempts made to found a medical school in Rangoon have failed; another difficulty to be contended with, is the absence from the language of Burma of words suitable to convey medical technical ideas. Thus the process of teaching in the Burmese language, especially through an interpreter, is slow, and requires constant "steadying." The first batch of students

qualified under Mr. Frost's tuition were considered private practitioners; but it was very soon found that, although the animal wealth of Burma in the aggregate is enormous, the price of individual animals in the districts is seldom worth the cost of medical attendance for the risk of restoring them to health. Accordingly, the graduates soon were diverted to other branches of livelihood, and Government found that their influence for good in the country was not appreciated. It has now been decided to introduce a civil organisation under Mr. Frost, who arranges that qualified natives be posted in the districts, in Government pay, and that their efforts be concentrated where the emergencies of disease outbreaks specially demand their presence. Under this organisation the onus of local repression falls very heavily on Mr. Frost, whose presence is constantly being required at various parts of the large and impracticable country under his supervision. The nature of the country varies considerably, but it is mainly a rich alluvial tract traversed by a network of large rivers, the watersheds of which are separated to near the coast-line by ranges of mountains running north and south. The mountainous division of *Arakan* lies at the north-west, and extends from the eastern limits of the Bengal Presidency downwards to the north of the Gulf of Martaban. Its people differ in language and manners from the Burmese people, and the difficulties resulting from this have necessitated the proposal to Government of a special class for the education of students for that part of Burma. Military operations here, during the first Anglo-Burman war especially, proved conclusively the prevalence of a very fatal form of fever in man and beast; but troops have marched through it in the dry season with little loss. *Tenasserim* extends downwards on the eastern coast of the Gulf of Martaban, along the Bay of Bengal to the Malay peninsula. It is specially interesting in association with the elephant and pony traffic which takes place with the Shan states (lying between Upper Burma and Siam) and with Siam. Elephant stealing is a frequent form of crime on the Burma-Siamese frontier, and one which presents the greatest difficulties in repression, because of the ingenuity of the thieves in altering distinctive marks, in eluding pursuit, and in complicating proof in law-courts. Moulmein is the centre of trade in live stock; the ponies and elephants come down to that town at certain seasons, and are purchased by dealers for export or local sale. Of elephants, large "tuskers" fetch a considerable price, since they are eagerly purchased by owners of saw-mills and the timber companies for dragging and stacking timber. A large number of the huge saw-mills of Moulmein are now thrown out of work, and even at Rangoon some are vacant, but at others two or three elephants per mill are employed. It is a favourite occupation among visitors to go to see these huge animals at work. The dragging consists in the withdrawal of large trunks of trees from the thick slime in which they are lodged when floated in from the river. These trunks require to be placed on the side of the saw-mill so accurately that their four sides in turn may be trimmed, so that ultimately square beams are formed. The accuracy with which the elephant adjusts these is admirable, as also the way in which he stacks them afterwards by moving the ends alternately. Sometimes he takes up large logs on his tusks, holding them in position with his trunk. The principal accidents to which these valuable animals are liable are sunstroke, incised wounds from the saw, and broken tusks. The latter accident is serious, as rendering the animal much less valuable than before for timber work. The former is considered the most frequent cause of death. There can be no doubt, however, that the owners and men in charge have only very imperfect notions of elephant diseases, and err often in diagnosis, although they are excellent practical managers of these huge animals in health. They have

to contend with the attacks of Genesic Furor, known as Musthee, such as occur periodically in the male elephant. This they generally do, not as is usual in the transport service, by chaining the animal up until the fit is over, but by giving him extra work and lower diet directly there are indications of access of this physiological condition. Most of the mill managers have had some experience with elephants up the country in the great timber forests, and we hear of epizoötics occurring periodically over large areas; probably Anthrax is generally the cause of the large fatality among elephants which results. There are times when, and parts of the country where, elephants constitute the only means of transport. They are therefore very extensively used by the Forest Department, and the military service is strong in this respect, especially at Thayetmyo and Tounghoo, the frontier outcoast stations along the Irrawaddi and Sit Tang respectively. At the former place these animals have done well, and there have been interesting observations of parturition and copulation made. The fruitful connections are generally made by wild male elephants out in the jungle, when the females are lent for use to the Forest Department. Tounghoo has latterly proved a very fatal place for Government elephants, the exact reason for which has not been explained. Here is stationed an elephant mountain battery, a form of artillery exceptionally well adapted for so marshy a country. Occasionally severe and fatal accidents result to elephants in crossing deep, muddy rivers; they are apt to get into quicksands, or to damage their feet on rocky bottoms, or break their legs. There is a suspicion that the elephants purchased at Moulmein of late years have been defective in constitutional stamina, and that this is the cause of the fatalities at Tounghoo. Of course it is extremely difficult to detect latent systemic defects when purchasing animals about which so little is known as elephants, and it may be that a less price having recently been offered by Government (a state of affairs now altered), dealers were not tempted to dispose of good stock; but in the absence of skilled evidence as to the cause of death, no definite conclusion can be drawn. The Karen country is described as abounding in elephants, herds of which are domesticated and driven to regular pastures. The owners are said to be rather cruel in managing them, and use them occasionally, young and old, for carrying light loads. In Moulmein are resident some of our best authorities on the subject of elephants and their management; a visit to, and long conversation with, Dr. Slymm, a Dutch gentleman, formerly an officer in the Forest Department, afforded me especial pleasure. Elephants from Moulmein for India are generally marched the whole of the immense distance to Dacca, fording or swimming the numerous large rivers *en route*. Sometimes they, when on the march, are disturbed by jungle fires among bamboos and reed grass, which grows to an enormous height over a great part of the country, called razor grass from the sharpness of its edges. These fires look magnificent, but sound like file-firing or the *feu de joie* so well known to heavy field battery officers as upsetting the equanimity of the most stolid of elephants.

The central or Pegu division of Burma is probably one of the richest portions of the world, being the immense alluvial deposits of the Irrawaddi and Sit Tang rivers. The rice grows in great luxuriance over the immense plains, which are for the greater part under water during the rains, but here and there present hills on which are built the villages and towns. With care and industry, doubtless several crops of rice might be obtained every year from so rich a soil, but in a country where no man can starve, and no man likes work, such a thing as a second crop seems to be unknown. The rice when ripe is cut in handfuls, just against the grain head, and the long straw left standing in the fields; the cattle are turned out to graze over it, and then it is set on fire, except the very small quantity collected by

Government for its transport animals. The rice-fields are usually separated from each other by good stout banks, differing markedly in size from the ordinary bunds of Indian rice-fields; on these coarse grasses grow, which afford a certain amount of fodder. During the grazing season the cattle get very fat, but after unusually hot seasons they at times become very poor, and suffer much from want of nutriment. A similar contingency results from the prevalence of floods, which confine the cattle to the villages, and often drown many of them. Thus to famine and flood may be attributed many serious loses of cattle in Burma, but, as might well be anticipated from the description of the country, disease also claims many victims. Dysentery and Foot-and-Mouth Disease are prevalent at times, but Anthrax and Rinderpest are the most fatal scourges. The bullocks of Burma are a special and highly valuable breed, excellently adapted for draught, but slow and of moderate size. They have broad and short faces with concave profile, medium horns, often constricted at the base, stout, thick-set necks, large but short barrels, and good stout legs. They are of no special colours. Some of them were brought over to India for the 1883-4 camp of exercise at Bangalore; they did good work, but proved much slower than the Amrut Mahal bullocks. Burma is very rich in cattle, both bullocks and buffaloes. These animals are not subject to the country fever so fatal to some other species, and the latter especially are valuable for ploughing, and work in the deep tenacious mud of the rice-fields. They subsist in the thick, low-lying jungle which covers so much of the country, forcing their way with ease through the undergrowth of grass higher than their heads. They are especially large and well-developed, and may be seen climbing the almost upright bank of the Sit Tang in a wonderful way, or standing in the river threatening to charge the frail teak canoe in which the traveller slowly works up the course of the river on the way to Tounghoo. It is reported that bullocks are in some districts replacing buffaloes, and that the breed of the latter is much degenerating. If this be so it is much to be regretted, as there can be no doubt of the special value of buffaloes for agricultural work in marshy countries. Milk is expensive in Burma, owing to the inhabitants being Buddhist, and therefore allowing the full supply of natural nourishment to the calf, but this religious observance has materially tended to preserve the constitutional robustness of the breed. The King of Ava, or Upper Burmah, has a few camels, and his territory, which is much drier than that which has been captured by Great Britain, is not unsuited to those transport animals; but dire experience during the wars has proved that the camel does not live in the delta of the Irrawaddi. The breeding of mules has been suggested, but in many parts of the country the donkey is utterly unknown, and Government experience with mules imported from the Punjaub and elsewhere, is that they suffer severely from epizoötic outbreaks of fever of a very prolonged and fatal character. It was my special duty to investigate this fever, and I found it to be that first described by Dr. Griffith Evans as "*Surra.*" I have, in my official report, entered into details concerning it. Here, as elsewhere, mules seem to be more liable than horses to Tetanus; some have been destroyed for Glanders or Farcy from time to time in Rangoon; Anthrax also annually exacts a certain tribute of victims. Thus specific disorders are not by any means rare in Burma among equine animals: during my stay, a case of Rabies occurred in an officer's charger. The ponies are justly celebrated, and are so well capable of performing the work of the country, and so well adapted to withstand the deleterious effects of the climate, that they almost entirely replace horses. Coming over from Madras, where the horses used are exceptionally large, one is struck with the smallness of these animals in Rangoon, and with the amount of work they will do in spite of this.. The Burman pony works well in a hack ghari, is excel-

lently suited for various other forms of draught, negotiates fences very creditably with enormous weights up (as in the hunt, of which the Rangoon people are so proud; and in steeple-chases). Altogether he is a wonderful little animal, full of go, but reputed to be hard of mouth, inclined to shy, and slow at the walk. When imported into India he does very well for draught, and a pair looks well and fetches a good price, but they are liable to suffer from liver disorder, and have the reputation of not being suited to the climate of the greater part of the Indian peninsula; some are sent to Calcutta and the Madras coast ports, but at present the main export is to the Straits Settlements. Penang and Singapore used to obtain their supplies of ponies from Java, but the Acheen war interfered with this, and has established the line of traffic from Rangoon, and especially Moulmein. The Burman pony has long been known in India as the Pegu, but at present there are at least three kinds to be obtained in the market. Of these, the first is the *Shan* pony, periodically brought down by his owners from the table-lands of the states between Burma and Siam. I was so fortunate, when at Tounghoo, as to see a large number of these animals on the march down to Moulmein. At Rangoon I should have missed them, as but few came down there this year, in consequence, probably, of that line being too much exposed to attacks by the Burmans, against whom the Shans are in a state of rebellion. The ponies were in a grove annually occupied in this way. They were of sizes ranging to a little over twelve hands, very variable in colour, and also in physique. The most peculiar, those pointed out as true, pure-bred Shans, attracted my attention at once, *as being perfect little cart-horses*, with Roman noses, intelligent expressions, stout necks, low withers, upright, straight fore-legs, with short pasterns, large hairy fetlocks, and wide, open, flat feet; chests of most extraordinary breadth, round barrels, goose rumps, the tail being set on very low down, and short thick hocks. These cart-horse-like ponies are highly valued as weight-carriers, and fetch a high price in the Rangoon and Moulmein markets, but less admirably made ponies are the rule, and may be had at moderate prices, especially at the latter place. The second kind of pony is the *Mandalay*. He is altogether a lighter and rather larger animal, with a certain touch of eastern blood, probably derived in times past from chargers presented by European adventurers to the king or nobles of Burma as an acceptable form of donation. He is well-made and handsome, well suited for harness or riding purposes, with very good trotting powers, and excellent constitution. The *half-bred* is the third variety. He is got by Government stallions out of country pony mares, and proves much faster than the pure native animal—so much so that it has been found necessary to protect the latter by the formation of a Burman Turf Club, and the establishing of regulations as to terms of running for ponies according to caste. The pony-breeding operations are under the supervision of Mr. Frost. The half-breds fetch good prices, and are much appreciated by a large section of the Rangoon community; but there is another and large party which considers that the ponies in Burma are now less robust for work and sturdy in constitution than formerly. The Burmans are very appreciative of pony-racing, and large stakes are given by them for competition, and the ordinary Gymkhana prizes are hardly considered worth trying for. They ride well, in the usual Oriental style, with short stirrups, on a cushion without flaps, but thickened in front and behind to form pommel and cantle. They use the double crupper and standing martingale. The "*Cassay horse*," described as fighting against us in the Burmese wars, were something of this sort, their appearance being rendered formidable by tinsel-decorated wings fixed in front of the saddle on either side, and by elaborate and brilliant defensive armour. Of course, they were quite unable to stand against the cavalry of our armies.

As regards general management of the ponies, I concluded that it is capable of very much improvement. The usual stable is a wooden structure slightly raised above the ground level, and with a wooden floor; the latter is liable to become rotten, and nasty holes form in it, the urine trickles through and saturates the soil beneath, which seldom receives any attention as to removal or disinfection. Accidents are liable to occur from kickers loosening the boards of which the stables are built, and getting their hind feet entangled in holes in the walls. The ordinary back stable is the ground floor of a house, usually very filthy and ill kept, utterly devoid of drainage. In Moulmein I observed temporary stables (with flat roofs) made of bamboo, for use by the batches of ponies brought down for sale. The staple food is unhusked rice (paddy), but experience has proved to the hack carriage owners the necessity for adding to this a certain amount of gram, chenna (Bengal gram) being that principally used. The paddy is not soaked or ground before giving, but placed in a kerosine oil tin and subjected to blows from a rough wooden pestle whereby its sharp points are broken off. The fodder is mainly "long grass," as cut on all sorts of land—marsh, laterite, in compounds, and so on. Hariali is seldom seen, for it grows only on the drier parts of the soil. At Thayetmyo it may be obtained in quantity, for there the red soil of Upper Burma begins to replace the thick alluvium of Lower Burma; at this place the ordinary fodder grass, when hariali is not procurable in quantity, is the common kuskus. It is remarkable how the dhoob (hariali) springs up whenever the land becomes dry and is exposed to the sun; I noticed this especially on the road leading from the then terminus of the Tounghoo railway to the banks of the Sit Tang, where, although no dhoob was detectable in the marshy ground, on either side, on the well-raised road, it grows in great luxuriance. Ensilage has been tried in Burma with more or less marked success. At Thayetmyo the preservation was excellent, but the process seemed to be expensive. At Rangoon it has been tried by both transport and commissariat. I was present at the opening of a silo of each. That of the transport was in laterite, non-absorbent soil, and under great pressure brought about by empty shells on its surface. These latter were found quite full of expressed moisture. The ensilage, after removal of the dark and mouldy layer always found on the surface, was found to be of a bright green colour, with a peculiarly pungent beery odour, and taste certainly not palatable to any of the animals to which it was offered,—even after it had been dried in the air not one of the animals would touch it; but a fresh batch of Amrut mahal bullocks arrived from Madras, and ate it fresh and with relish. The silo of the commissariat was opened in the presence of Dr. Evans and myself, among others. It had been prepared in soil much more absorbent than the laterite, and no surplus moisture was found under the boards placed on it; it was much lighter in colour than that from the transport silo, and Dr. Evans aptly hit on its colour and odour in describing it as like the contents of the stomach of a herbivore. Its smell when dry was pungent in the extreme. Thus these experiments supplement others in proving that fodder may be freely preserved in ensilage for use during a fodder famine, for instance, or for storing in an entrenched position where hay could not be preserved from fire. Ensilage will therefore have a distinct and special value in tropical countries as a preventive of the annual semi-starvation of the cattle in hot weather, but it will be long before the apathy of Indian natives and the carelessness of Burmese admits of it being considered a popular process in animal management. One valuable article of fodder in Burma is tank grass, a sweet, not rank, form of millet which grows in all parts of the country in shallow water. The Shans keep their ponies fat on this, always cutting it above the water level, and giving the sweet, fresh grass-tops in practically unlimited amount. If the

grass-cutter be allowed to bring this in, or the contractor to supply it, the whole stem cut at the bottom of the water is brought, and the lower part, covered with slime and brown, semi-decomposed leaves, is not good for horses; nor should the whole grass cut in this way be preserved as hay. The mixed long grasses of Burma, when properly cared for, form excellent and valuable hay; a good crop may be grown in a fair-sized compound in Rangoon, as Mr. Frost's excellently exemplified. The pony owners in Upper Burma, I am told, have a strange method of feeding their animals. They utilise an old teak canoe as a water-trough, through which a continuous stream is allowed to flow while the animal is feeding, and into which is put all the food, mixed. Thus the animal takes in water with his food, and never needs to be taken to drink. Mussauls—"condition balls" as the English groom would call them—are constantly given. They consist of vegetable tonics and aromatics of very numerous varieties in complex formulæ, the prescriptions of which are religiously kept secret. I procured the formula, in Burmese, of one of these mussauls, but when translated it was found to be so indefinite as to amounts and kinds of ingredients, that it could not be prepared in Rangoon with any exactitude; besides, it consisted of many up-country drugs not found in the Rangoon markets. With regard to the diseases of ponies in Burma, they closely resemble those found in an average Indian practice, but I think lung and pleura disease is more common, and certainly the frogs of the hoofs are more often diseased; these conditions being probably associated with greater moistness of the climate, and perhaps less care and attention to the animals than in most parts of India. Kumree—Paraplegia—was extremely prevalent among the battery horses when field artillery was stationed at Thayetmyo and Tounghoo. The losses were so great that these places were given up as horse-stations, and are now occupied by mule and elephant batteries. There is still in the lines of the former place a wall built to protect the animals from strong breezes, a reminder of the common name of the disorder, "a stroke of the wind." The Burmese like their ponies to stand in almost rampant position while feeding and while being groomed. The former result they secure by great downward slant posteriorly of the stalls, the latter by tying the head high against a tree, with a prominent clump of roots at its base; these processes are considered to strengthen the muscles of the back. I saw one very small pony which was considered most valuable because of a "feather" on the top of the withers, under the pommel of the saddle, which was bound to bring the rider good luck. Burmese superstition, I am told, was recently shown in the case of an elephant born in the commissariat lines at Thayetmyo; he was so light coloured that the natives thought he was a white elephant, and the women came and suckled him, but as he developed rapidly under this luxurious treatment, he became blacker, and so was deserted as a rank impostor no longer worthy of divine honours. The women are fond of small puppies, so much so, that they are reported to suckle them themselves. Dogs seem to thrive fairly in Rangoon; there was a very excellent show of them and other animals on last New Year's day. It seems to me that as the weather gets warmer they suffer much from Eczema Rubrum. Pigs are fed by the commissariat for issue to the troops as pork, to constitute an occasional variety on the beef. The piggeries at Thayetmyo and Tounghoo are flourishing, and the progress in condition of their occupants, mostly bred by imports from the Andamans, is calculated with interest by Tommy Atkins. The pork is excellent, and, of course, clean fed. The Chinamen who abound so much at Rangoon are extremely fond of pig, which animal is, therefore, much more frequent than in India, and less neglected and outcast. The beef in Burma contrasts well with that of most parts of India. This is the more satisfactory as but little mutton is to be had, but hydatids seem very

common in it. Sheep do not thrive, and very few are to be seen. Mr. Frost started a sheep-run up country, but found that it could be carried on only under the strictest European supervision, otherwise the animals died off, or became incurably affected with Foot-rot. It only remains to notice that mild bull-fights are popular in the Tatang country to east of the Sit Tang ; that the Shan ponies are brought down as geldings, and there seems to be no opposition to emasculation of animals among these hill-men, and that, as believers in the transmigration of souls, the Burmese are opposed to compulsory slaughter of animals, and will not willingly take away their life unnecessarily. This is unsatisfactory, as causing an owner, when he considers one of his animals incurable, to turn it out to shift for itself, even though it be suffering from Glanders or other communicable disease.

MICROBES IN BOVINE PNEUMONIA AND EQUINE INFLUENZA.

SOME researches have been made by Professor Lustig, of the Veterinary School at Hanover, with a view to the discovery of the pathogenic microbe of Contagious Pneumonia of bovine animals (*Centralblatt für die Med. Wissensch.*, No. 12). He has inoculated suitable cultivating media with fragments of lungs in a state of recent inflammation, and also with lymph taken from the interlobular connective tissue of the inflammatory foci, and has succeeded in isolating in pure culture four varieties of microbes. One is a bacillus that liquefies gelatine and forms at the confines of the liquefied area pulverulent masses of a whitish-grey colour. When all the gelatine is liquefied the bottom of the vessel is occupied by a powdery deposit of the same nature. The bacilli are short and thick rods. The liquefied gelatine varies in tint dependent upon the proportion in which the other varieties of microbes are present. The second microbe is a micrococcus which does not liquefy gelatine, and forms at the surface a deposit something like the white of an egg in appearance ; the gelatine is gradually absorbed as this cultivation proceeds. The third is also a micrococcus, very like the preceding, only that it forms golden-coloured clusters. The fourth is micrococcal in form, and appears as coloured heaps of a yellowish orange tint, having a waxy look on the surface of the gelatine. It does not liquefy the medium, and grows better on potatoes. Inoculations made on a heifer gave mostly negative results.

Six kinds of microbes have been detected by the Professor in the fluids of horses affected with Influenza (*Centralblatt für die Med. Wissensch.*, No. 23). The one of the six that he regards as the germ of Influenza forms cultures having a tint varying between clear yellow and citron yellow, with a dull appearance. The islets of the growth spread laterally and downwards, chiefly from the centre. The rate of growth is very slow, but is more rapid in gelatine than in serum of the blood of the horse. It belongs to the class of aerobic bacilli. Inoculated under the skin of the pectoral region of a horse four years old, a culture of this microbe gave rise to a painful inflammatory œdema. The œdema afterwards formed a circumscribed tumour and became indolent, though finally it burst in two places spontaneously. The escaping fluid contained yellow and whitish flakes. This result is regarded as proving the pathogenic nature of the inoculated material.

PASSAGE OF BACTERIA FROM MOTHER TO FŒTUS.

An experimental inquiry which may throw light on the relations of the fœtus to the mother in infectious diseases, says the *Lancet*, has been communicated to the Académie des Sciences by M. Pasteur for M. Koubassoff. A full abstract of the paper is reported in *L'Union Medicale* of July 18th. The mode of procedure was to inject various cultivations of the bacillus anthracis under the skin of a pregnant guinea-pig. A careful examination of the fœtus was made after the death of the mother. It was found that the bacilli of Anthrax always pass from the mother to the fœtus; that the longer the time that elapsed between the inoculation of the pregnant mother and her death, the more numerous were the microbes in the fœtus; that more bacilli from virulent cultivations pass over than from an attenuated virus; that pathological conditions of the membranes of the placenta and fœtus hindered the passage of the bacilli from the mother to the fœtus; that inoculation of pregnant females with a too powerful virus nearly always caused the death of the fœtus; that inoculation with a virulent virus after the mother had been protected by satisfactory vaccination nearly always killed the fœtus—in other words, the fœtus cannot be protected by maternal inoculation.

GLANDERS IN THE HUMAN SUBJECT, AND THE BACILLUS OF GLANDERS.

At St. Thomas's Hospital, London, a well-marked case of Glanders was admitted in July last, the subject being a cabman in whose stable Glanders was present. There appeared to be no point of inoculation; the condition of the tonsils suggested inoculation there, but they seem to be peculiarly liable to suppuration in this disease. There was no nasal discharge, and no apparent disease of the lymphatic glands. When the patient was admitted the case much resembled one of Pyæmia secondary to disease of the right femur; and it was only on the appearance of the eruption, and the somewhat profuse expectoration, that further inquiry elicited the history of Glanders in the man's stable, which important fact had been carefully concealed by the patient and his friends when giving an account of the illness, the last of the glandered horses having died two months previously. The man succumbed five days after admission, the symptoms during life and the necropsy proving the case to be typical of the malady. On the fourth day careful examination was made of the blood, but no foreign organisms could be detected in it. Some of the secretion from the pustules, however, was examined, after being stained with methyl violet and washed with dilute acetic acid, and under high magnifying power, bacilli resembling those of Tuberculosis were found.

ON A FEBRILE DISORDER COMMUNICATED FROM CALVES, AND ACCOMPANIED BY AN ECZEMATOUS ERUPTION.

T. Frederick Pearse, M.D., Haslemere, writes to the *British Medical Journal* of August 8th:—A case having the above characteristics has lately been under my care, and I have particulars of two other cases. Similar eczematous patches, but of a very mild form compared to that of my case, are said to be frequent on the hands, arms, and face of those having

the handling of these diseased calves. The eruption on the animal is called by my patient (a castrator) "Ringworm;" but there are certainly not the same acuteness of symptoms or discharge in the animal as in the disease propagated to the human subject. It is more than doubtful whether the disease in the calves is of the nature of "Ringworm" at all. I have not had the opportunity of seeing the disease in calves.

The general symptoms, which came on somewhat acutely, were heightened temperature, varying from 99·5° to nearly 102°, with a frequent and weak pulse, moist but coated tongue, foul breath, a feeling of malaise, and general weakness. These have lasted for nearly a month, though they have somewhat improved during the latter half. My patient says that his brother suffered for six weeks during last winter in exactly the same way as himself.

The eruption consists of patches, somewhat like incipient boils, which burst, but, instead of discharging pus, pour out a very glutinous serous fluid, which quickly dries and forms a hard scab. There is considerable thickening and hardness of the skin around, and some slight enlargement of the lymphatic glands. The eruption is situated all round the chin, and under the jaws on both sides, with isolated patches on the forehead, eyebrows, and cheek. All round the lower margin of the face there is one continuous discharging surface. As soon as the scabs are removed, fresh discharge hardens and forms a scab again.

A question may, perhaps, be raised as to diagnosis. My patient was in perfect health before this attack, and never had an eruption of any kind about him before. It was treated by my *locum tenens*, in its early stages, for Eczema, but apparently without the slightest benefit. The surface is hardly extensive enough, or associated with sufficient inflammatory appearances, to account for the decided general symptoms. Again, the thickening around the base of the eruption is too hard for Acute Eczema, and there is not the same swelling of the skin. There is not the same pain or soreness, either, as in Acute Eczema. I have prescribed quinine (three or four grains), with full doses (30 minims) of nitro-hydrochloric acid; and, locally, I tried, first, dusting with iodoform-powder; but, finding apparently little benefit from this, it was changed for oleate of mercury, with oleate of zinc, as an ointment. The sores have considerably improved, and the man's general condition is nearly restored.

BURSÆ MUCOSÆ.

BY PROFESSOR F. EICHBAUM, OF GIESSEN.

(*Continued from page* 102.)

Bursa subcutanea on the upper and lower tuberosities of the anterior spinous process of the ilium (Bursa iliaca lateralis) are seldom absent. That on the superior tuberosity reaches a length of 10 ctm., and a breadth of from 4 to 5 ctm. The interior is frequently divided by one or more septa into unequal divisions. This bursa is sometimes united to that found on the inferior tuberosity, which is much smaller than the former, usually about the size of a walnut.

Bursa subcut. on either side of the Manubrium sterni. That found on the right was larger (length 5 ctm., breadth 4 ctm.) than that on the left. They were on the level with shoulder-joint over the origin of the cervical portion of the Panniculus carnosus and the anterior portion of the superficial pectoral muscle (Porteo clavicularis of the M. pectoral. major of man, and M.p. transversus of *Percivall*), and extends to the centre of the carniform cartilage

(Manubrium sterni), when they are separated from each other by a strong septum.

Bursa mucosa subcut. was in one instance found over the left Tuber. ischii. It was of large dimensions (8 ctm. diameter) and of a round form. There was a large bony enlargement (Spavin) on the left hock in this case. No bursa was present on the right side.

(*b*) *Subtendinous Bursæ.*

Bursa mucosa is frequently present over the superior spinous process of the fourth dorsal vertebra between this and the cordiform portion of the Lig. nuchæ. The bursa is oval in shape (long diameter 4 ctm.), and sometimes is divided into compartments; its internal surface is irregularly roughened with numerous papillary excrescences on its wall. In several instances the Ligamentum nuchæ (Nachenband) was united to the spinous process mentioned above, then the bursa was divided and intact on either side.

IV.—Anterior Extremities.

(*a*) *In the Region of the Shoulder.*

External (*lateral*) Surface.—*Bursa mucosa subcutanea* on the tuberosity of the spine of the scapula under the fascia is only seldom seen, and generally divided into compartments or pierced by tendinous fibres.

Bursa mucosa subtendinosa, constantly present under the insertion tendon of the M. supraspinatus (subspinatus, *Fleming;* Postea spinatus, *Percivall*). Its size is about that of a walnut; its external wall is related to the above-mentioned tendon, and its internal to the depression on the tuberosity of the external part of the head of the humerus, to which it is intimately united. The inferior part of the bursa is frequently divided into larger or smaller spaces by connective-tissue membranes or fibres. Besides this, a small bursa is sometimes present on the bone behind this depression, and is separated from the former bursa by a septum.

Bursa mucosa is frequently seen under the short abductor of the arm (or Teres minor, *Fleming*, or Scapulo humeralis externus) and over the posterior part of the joint capsule, exactly over the posterior elevation on the head of the arm-bone (humerus). According to Franck,* this bursa—which is about the size of a walnut—is perforated by tendinous cords and communicates with the capsule of the joint by one or two openings. In some cases a union may be seen between this bursa and that under the M. supraspinatus muscle.

Anterior Surface.—*Bursa mucosa* between the origin of the long flexor of the fore-arm (M. biceps brachii, *Fleming;* Flexor brachii, *Percivall*) and the coracoid process of the scapula (Proc. coracoideus). The bursa is about the size of a hazel nut, and surrounded by the fat which is found in this cavity.

Bursa mucosa under the tendon of the long flexor of the arm (Flexor brachii) as it passes over the bicipital groove (Rollfortsätzen).

Bursa intertubercularis.—The wall of this bursa passes from the periphery of the cartilage covering the bicipital ridges to the tendon over whose internal surface it passes, and to which it is intimately united; it projects loosely over the sides of the tendon and passes to the posterior surface. The bursa is covered on both sides by the insertion branches of the M. supraspinatus, and divided from the shoulder-joint capsule by the bolster of fat which lies at its posterior surface.

Internal (*medial*) Surface.—*Bursa mucosa* under the M. coraco brachialis (Coraco humeralis, *Percivall*) is constantly present, and commences under the origin of this muscle on the Processus coracoideus, and passes

* "Anatomie der Hausthiere." 1871. S. 421.

with the tendon over the lower part of the tendinous portion of the M. subscapularis, on whose posterior border it ceases.

Finally, we would mention that there are several small Bursæ synoviales found on the anterior and posterior surfaces of the capsule of the shoulder-joint.

In the region of the Ulna joint.

(*a*) *Subcutaneous Bursæ.*

Bursa mucosa on the posterior surface of the olecranon is not constant, but very frequently present. In size, it varies from that of a walnut to an apple, and is often divided by septa into several compartments. Its position is inclined to the outside of the Proc. anconæus.—*Bursa olecrani.*

Bursa mucosa over the elevation on the outer side of the head of the radius (for the attachment of the external lateral ligament of the joint). It is smaller than the last-mentioned bursa, and varies considerably in size and position. Sometimes it is about the size of a walnut, and its walls smooth; at others it is larger, and divided into incomplete compartments by a fenestrated tissue, has numerous connective-tissue fibres and vessels passing through it, and possesses numerous uneven, fatty, reddish-coloured papillary eminences on its walls.

(*b*) *Subtendinous Bursæ.*

EXTERNAL (*lateral*) SURFACE.—*Bursa mucosa* under the insertion tendon of the M. anconæus longus (caput magnum of the Triceps extensor brachii, *Percivall*), between it and the lateral elevation of the Processus anconæus; shape, oval. Diameter, 2·5-3 ctm.

Bursa mucosa under the origin of the external flexor of the metacarpus (M. extensor carpi ulnaris of man, and Flexor metacarpi externus, *Percivall*). Its size is between a hazel and a walnut. Its position between the external lateral ligament and posterior surface of the lateral ligament elevation on the head of the radius, on the one hand, and the above muscle on the other. As Franck (*loc. cit*, p. 427) observes, it is very frequently, but not always, in communication with the elbow-joint capsule by an opening from 1·5 to 2 ctm. broad.

ANTERIOR SURFACE.—*Bursa mucosa* under the insertion tendon of the M. biceps brachii. It is situated between the two insertions of this muscle, is elongated in form, 4 to 5 ctm. long diameter. It commences immediately over the upper insertion tendon, and passes obliquely under the other branch of the tendon and under the internal lateral ligament of the radio-humeral joint, on whose posterior border it ceases. No communication has been found between this bursa and the joint capsule. The bursa is sometimes absent, in which case the two branches of the tendon are united together.

Bursa mucosa under the insertion of the short flexor of the fore-arm (M. brachialis externus h.s., Humeralis externus, *Percivall*). It is oval in shape, about the size of a walnut, and placed between the above-mentioned muscle and the internal (medial) lateral ligament of the radio-humeral articulation on the one side and the bone on the other.

INTERNAL (*medial*) SURFACE.—*Bursa mucosa* situated between the insertion of the long extensor of the fore-arm (M. extensor cubiti longus; Scapulo-ulnaris of *Percivall*), on the internal surface of the Processus anconæus and the tendon of the middle extensor of the fore-arm (*Fleming*), (M. anconæus internus; caput parvum of *Percivall*). It is about the size of a walnut.

Bursa mucosa commences at the anterior bony process of the olecranon, and passes obliquely backwards along the internal surface of the Processus anconæus, under the tendon of the M. anconæus internus (caput parvum, *Percivall*), and ends just where this tendon is inserted in the bone. It is

oval in shape, and frequently divided into two or three compartments by incomplete membranes.

Bursa synovialis under the origin of the flexors of the foot (Flexor pedis perforans and perforatus, *Percivall*) and the internal flexor of the metacarpus (Flexor metacarpi medius internus, *Percivall*). It is very extensive, and is situated immediately under the radio-ulna joint at the posterior part of the radius, and extends partly on to the internal surface of the ulna. The inferior border of the bursa extends to about 3 ctm. below the joint. It communicates with the joint capsule by a comparatively large opening.

Bursa mucosa under the origin of the flexors of the metacarpus (Benger des Vordermittelfusses) (Flexor metacarpi internus, *Percivall*), immediately behind the roughened elevation on the head of the radius for the insertion of the internal lateral ligament of the joint. It lies between the muscle and the joint, is round in form, and about the size of a walnut. In many cases this bursa is united with that last mentioned, in which case it communicates with the joint capsule.

Carpus.

ANTERIOR SURFACE.—A *subcutaneous mucous bursa* is frequently found over the os magnum (*os capitalum*). It is about the size of a hazel-nut; its walls are composed of close connective tissue, and contains a comparatively large quantity of yellowish synovial fluid. Others may be found over each of the eminences on the inferior part of the anterior of the radius.

Tendon sheath of the anterior extensor of the phalanges (Extensor pedis, *Percivall*), commences when the branch of tendon (Phillipp'schen muskels) is given off from the Extensor pedis to the Extensor os. suffraginis, about 15 ctm. above the carpal joint, passes downward along the tendon-groove in the radius and anterior of the carpus, and ends below the roughened prominence on the superior end of the metacarpal bone. It loosely surrounds the tendon of the Extensor pedis, and externally it is strengthened by the deeper layer of the fascia of the fore-arm, with which it is firmly united. The tendon which glides in the sheath possesses a "mesotenon" of about the width of three fingers, which takes its origin from the internal (medial) border of the sheath.

Tendon sheath of the oblique extensor of the metacarpus (Extensor metacarpi obliquus, *Percivall*), commences on the lateral border of the Extensor metacarpi magnus (*Percivall*) (Schienenbeinstreckers), about 8 ctm. above the knee-joint. It passes obliquely from above downwards and inwards in apposition with the sheath of the Ext. metacarp. magn., then in a groove formed for the ligament of the joint gradually across the joint to the head of the internal small metacarpal bone. The outer wall is strengthened by fascia, and possesses a "mesotenon" about 1 ctm. broad, and is united to the anterior surface of the tendon, so that, instead of a vagina, it is only an elongated bursa vaginalis.

Tendon sheath of the anterior extensor of the metacarpus (Extensor metacarpi magnus, *Percivall*), commences about the same level as that of the Extensor pedis, about the superior part of the inferior third of the radius, passes downwards along the central groove on the anterior part of the radius and the capsular ligament on the anterior surface of the carpus, and terminates on the lower row of carpal bones. The sheath possesses a double mesotenon, which passes to either side of the tendon and covers the whole of it.

Under this sheath, but not communicating with it, there is usually a small bursa situated above the os magnum.

EXTERNAL (*lateral*) SURFACE.—*Bursa mucosa subcutanea*, varying in size, situated over the external elevation on the lower end of the radius for the insertion of the lateral ligament of the joint.

Tendon sheath of the lateral extensor of the phalanges (Extensoros suffraginis, *Percivall*), commences about 3½ inches above the carpal joint on the external surface of the radius, passes downwards over the lateral ligament of the joint, and ceases on the superior end of the metacarpal bone. It is related, on its external surface, with the annular ligament of the knee. At its inferior half a mesotenon about 1 ctm. broad passes out from the tendon.

Tendon sheath of the insertion branch of the external flexor of the metacarpus (Flexor metacarpi externus, *Percivall*). The sheath commences with the tendon on the superior border of the trapezium (os accessorium), passes along the groove on the outside of the bone obliquely forwards and downwards, and terminates in the region of the unciform bone (os hamatum). The internal wall of the sheath lies immediately on the capsular ligament between the radial and metacarpal rows of the carpal bones, and there is a communication at this point between the two. The external wall of the sheath is covered and strengthened by the annular ligament, and partly by the lateral ligament.

POSTERIOR SURFACE.—*Tendon sheath for the tendon of the superficial and deep flexors of the phalanges* (Flexor pedis perforatus and perforans, *Percivall*) is very large, and covered by the annular ligament (carpal sheath) of the knee. It commences above, just under the origin of the tendinous ligament, which joins the perforatus above the knee (superior suspensory ligament), about 10 ctm. above the joint, passes downwards over the radius, back of joint, and the inferior tendinous ligament (tendo-subcarpal ligament), and terminates where this ligament joins the perforans tendon. On its internal border it is in apposition with the sheath of the Flexor metacarpi internus (*Percivall*) from where it sends out a broad "mesotenon" on to the tendons passing through it. It covers the tendons, and passes as a blind pouch between them (4 to 5 ctms. long) to about the lower part of the joint. Externally it is in apposition with the internal surface of the trapezium, and its superior part is covered by the Flexor metacarpi externus (*Percivall*). The posterior wall is in contact with, and joined to, the internal surface of the (carpal sheath) annular ligament. The external fibrous layer is wanting on those parts of the sheath which project above and below the annular ligament (endpforten-endgates).

INTERNAL (*medial*) SURFACE.—*Bursa mucosa subcutanea* over the head of the internal small metacarpal and trapezoid bones. It is about the size of a walnut, and has several times been found.

Tendon sheath of the Flexor metacarpi internus (*Percivall*) commences about a hand's-breadth above the knee-joint. It is situated on the internal surface of the radius, then passes downward towards the posterior surface of the carpus, bounded by the annular ligament, and terminates on the head of the internal small metacarpal bone. It gives off a "mesotenon" about as broad as a finger to the tendon passing through it.

In the region of the Phalanges (fetlock, pastern, and foot).

ANTERIOR SURFACE.—*Bursa mucosa* on the anterior surface of the inferior end of the metacarpus and metatarsus respectively. It is situated over the articular elevation between the capsular ligament and the Extensor pedis tendon, with which the bursa is intimately united. It is oval in shape, and about the size of a walnut (length, 2·0 to 2·5 ctm.; breadth, 1·5 to 2·0 ctm.), and sometimes communicates with the joint capsule (Franck, *loc. cit.*, p. 318).

Bursa mucosa under the tendon of the lateral extensor of the phalanges (Extensor os suffraginis, *Percivall*), and over the anterior surface of the fetlock joint. It is about the size of a hazel-nut.

SIDE SURFACES.—Besides a *Bursa mucosa subcutanea*, which is often present on the external surface of the fetlock-joint, we constantly find a *Bursa mucosa subtendinosa* on both sides of the phalanx prima (os suffraginis), between the bone and the tendinous branches of the suspensory ligament, which passes obliquely across the bone to strengthen the tendon of the Extensor pedis. It commences at the origin of these ligaments on the lateral surfaces of the sesamoid bones, and extends to the lower part of the upper third of the bone, and in some cases to its centre. The internal wall of these bursæ are intimately connected with the ligamentous structures of the sesamoid bones, and the periosteum of the os suffraginis ; the external wall is united to the tendinous structure above it, in a similar way to the bursa on the internal surface of the hock. A small bursa about the size of a bean is often found under the ligament just before it joins the Extensor pedis.

POSTERIOR SURFACE.—*Bursa mucosa subcutanea* on the posterior surface of the fetlock-joint. It is frequently only the size of a bean, and surrounded by compact subcutaneous connective tissue.

Bursa vaginalis on the posterior surface of the tendon of the superficial flexor of the phalanges (Flexor pedis perforatus, *Percivall*) at the back of the fetlock-joint. It is united to the centre of the tendon by loose connective tissue, and towards the side is connected to the sheath of the Flexor pedis perforans by an opening about 10 ctm. long. Its lateral walls pass into the anterior walls of the

Tendon sheath of the deep flexor of the phalanges (Flexor pedis perforans, *Percivall;* great sesamoid sheath, *Fleming*). This commences *præter propter* 10 ctm. above the fetlock-joint, passes then downward over the posterior surface of the suspensory ligament, sesamoid bones, os suffraginis, and terminates about the centre of the os coronæ. The anterior wall of the sheath is (free above to below) in relation with the tendinous sheath of the Flexor pedis perforatus—which encircles the Flexor pedis perforans—the posterior surface of the sesamoid bones, the inferior suspensory ligaments, and, finally, with the capsular ligament of the pastern-joint (first interphalangeal articulation, *Fleming*).

At about the centre of the inferior suspensory ligaments, a cylindrical membrane (mesotenon) passes on to the tendon ; however, it is sometimes composed of more than one fenestrated layer, in which case they take their origin from either side of the middle inferior ligament. The posterior wall is intimately bound to the perforatus tendon, and passes downwards as far as the bifurcation ; it then forms a blind pouch below (*cul-de-sac*), between the two branches of the tendon on the one hand, and the ligaments between the lateral cartilages and os suffraginis on the other. Frequently, however, this sac-like portion of the sheath is divided in its centre by a membrane, forming a special small sheath for each insertion-branch of the tendon (*cf.* Dieckerhoff, "Die Pathologie und Therapie des Spat der Pferde." S. 185).

After the division of the tendon into its branches, the posterior wall of the sheath passes downwards as a thin membrane, filling the triangular space, and finishes on the bulbs of the fatty frog (endgate-endpforte). The lateral walls of the sheath are small and weak, but are strengthened by the fibrous layer which binds the tendons down to the fetlock, and behind the sesamoid bones by the annular ligament, and on the posterior of the pastern by the tendinous girdle (Schaugurte, *Leisering*), and, finally, the lower part is bound down by the fibro-elastic membrane attached to the hoof and the pastern bones (Huffesselbrinband). Between the insertions of these membranes there are spaces (intermediary gates—Zwischenpfforten), viz., a small superior space between the annular ligament and superior branches of the tendinous girdle (membranous expansion) ; an inferior space, about 3 ctm. long, between the superior and inferior branches of the last-named expan-

sion, through which, under pathological conditions (excessive secretion), the sheath can be distended.

The cylindrical lumen of this sheath has several projecting *cul-de-sacs*, the largest of which is superiorly placed between the posterior surface of the metacarpus and metatarsus respectively, on the one hand, and the above-mentioned membranous expansion of the perforatus tendon on the other. It is placed in the triangular space formed by the two insertion branches of the suspensory ligament and the sesamoid bones. The anterior wall is separated from the capsular ligament of the fetlock-joint by adipose tissue, the lateral walls reach to about the level of the border of the suspensory ligament, and are here covered by loose connective tissue (end-gates endpforten). Further, on either side of the fetlock, lower down, are two smaller *cul de-sacs*, which are placed in the intermediary spaces mentioned above, and in which may frequently be found tendinous fibres and small folds, which divide the diverticle more or less into numerous incomplete compartments.

Bursa mucosa under the insertion of the deep flexor of the phalange (Flexor pedis perforans, *Percivall; bursa podotrochlearis*, Brauell*). This bursa is separated from that last mentioned by a thin membrane. It commences on the posterior border of the navicular bone, and extends to the insertion of the perforans tendon into the pedal bone. It is a completely-closed sac; the anterior wall covers the navicular bone, the sides and inferior surface of the flexor tendon, and superiorly it passes from the navicular bone to the tendon which completes the sac No communication has been discovered between this bursa and the pedal joint.

(To be continued.)

Proceedings of Veterinary Medical Societies, &c.

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

A MEETING of this Association was held at Skindle's Hotel, Maidenhead, on July 31st. The members assembled for luncheon, by invitation of Mr. J. F. Simpson, at his residence in the High Street, and afterwards held their meeting in the hotel saloon.

A letter from Dr. Fleming, thanking the Society for electing him an honorary associate, was read.

Re Clause IX., Supplementary Charter, 1876.

The first business on the agenda was to receive a report from kindred Associations re Clause IX., Supplementary Charter, 1876.

The SECRETARY reported that, in accordance with a motion of Mr. J. F. Simpson, to ask the co-operation of other societies in this matter, he had written to all the secretaries of different Associations in the three kingdoms, and from all except the North of Ireland Association he had received replies, which in nearly every instance were in favour of rescinding the alteration of Clause IX. so that the rights and privileges of members of R.C.V.S. be preserved.

The SECRETARY then moved that he be instructed to forward to the Council of the R.C.V.S. a resolution to this effect: "That it is absolutely necessary for the welfare and encouragement of the R.C.V.S. that they have free and unlimited choice in the selection of members of the profession to serve on the Council. The members of this Association therefore petition the President and Members of the Council to take the necessary steps to

* "Die Chronische Fussrollenentzündung." Magazin fur Thierheilk. 1845.

have Clause IX. rescinded of the Supplementary Charter, granted by Her Majesty the Queen on the 23rd day of August, 1876.

Mr. WALKER (1st Life Guards) seconded.

Mr. SIMPSON (Windsor) said that what the various Associations throughout the country thought of this matter was much the same as the propelling power which influenced the Government of the country. What the rank-and-file of the electors of the country thought was the stimulus that acted upon the Prime Minister and his coadjutors in the Cabinet; and what the veterinary medical associations throughout the kingdom thought was really the impetus that moved the Council of the R.C.V.S. The Council had been moved upon this question, and, without a dissentient voice, were good enough to sanction the selection of a Committee which he (Mr. Simpson) proposed. That Committee had now got the work in hand. It was a large and influential committee, and he hoped their labours would result in the removal of what he considered a very great injustice to members of the profession. The matter, he said, was now ripe for discussion, and he assured them that personally he would use his utmost exertions to secure the legitimate right of every man who is a member of the College being eligible to sit upon the Council. By the Charter of 1844 all members were eligible for a seat, and they did think it was very hard that they should be deprived of their rights almost without discussion. He (Mr. Simpson) valued his seat on the Council, and knowing as matters now stood that next August he would be ineligible by the operation of Clause IX. from any longer retaining his seat, he had taken time by the forelock and qualified himself, let what would happen, by passing the Fellowship Degree. He did hope, however, that before then a satisfactory solution of this important question would be arrived at by the Council.

Professor PRITCHARD asked if it would not be well, even after what Mr. Simpson had told them, to allow the resolution proposed to go to the Council.

Mr. SIMPSON: Certainly; I rose almost to apologise for having forestalled the Association.

Professor PRITCHARD: Then I would add, that the Council be specially asked whether it is legal. You recollect the remarks I made at the last meeting of the Association I had the honour to be present at. I doubted very much then whether a member of the Royal College of Veterinary Surgeons could be shut out by any subsequent Charter, and I more strongly hold the opinion now. I should like to add that to the resolution: That the Committee be asked whether legally any member of the profession can be shut out from becoming a member of the Council.

Mr. SIMPSON (Maidenhead) argued that inasmuch as no Local Board or Town Council could pass bye-laws which would contradict an Act; in the same way, the College had no right to a Supplementary Charter contradictory to the spirit of the original Charter. It might be, however, that a Supplementary Charter had all the powers of contradicting an original Charter; that he did not profess to give an opinion about; it was a question of law. He and others had been taunted with the suggestion that to those who were only members it was a question of sour grapes—that they had not obtained the fellowship, and therefore spoke against it. Having this partly in view—although it was not wholly his object—he went in for a Fellowship Degree, so that he could now discuss the matter without prejudice. He supported the resolution of Mr. Kidd, and he thought the discussion of a Committee of the Council was the right way of arriving at a satisfactory conclusion. The Committee had been fairly appointed, and represented all classes of the veterinary profession, and he felt perfectly certain that when the Committee had had one or two meetings they would be able to report to the Council

that Clause IX. did not meet with the approval of the members of the profession generally.

Mr. DARLING remarked that if the original Charter was not annulled when the other was brought forward, it would hold good.

The CHAIRMAN said he thought they might congratulate themselves so far on the steps that had been taken in reference to this matter. As Mr. H. Simpson had told them, he (Mr. Simpson) had somewhat forestalled them in the matter by bringing it before the Council, and for that they had to thank him. He had done it with a good motive, and the result had been extremely satisfactory, inasmuch as there was such a representative body to take it into consideration. They would give it fair and just weight, and he had no doubt that that Association, as a representative body of the profession, would be perfectly satisfied with the ultimate result of their consideration. The resolution of Mr. Kidd would actually place before the Council the opinion of the whole Associations.

The resolution was then put and carried unanimously.

The Next Meeting.

It was decided to hold the next meeting of the Association in London, and a small committee was appointed to carry out the arrangements.

The Title of "Castrator."

Mr. SIMPSON (Maidenhead) moved the following resolution : "That in the opinion of this Association unregistered practitioners who assume the title of 'Castrator' are offenders under the Veterinary Surgeons Act." At their last meeting, he said, he had referred to this matter, and had stated that he would like to see a test case put forward to decide once and for all whether a man who was neither a member of the R.C.V.S. nor a registered practitioner had the right to assume the title of "Castrator." In bringing forward this motion, *primâ facie* it might seem that he was taking a very selfish view of the matter. For this reason: There were a class of men called "Castrators" who relieved a member of the R.C.V.S. of some of those unpleasant duties which, but for the existence of these men, would fall upon him ; and he confessed that he should be disposed to shut his eyes to what they did in the way of castration if it were not for the fact that they interfered with the practice of the legitimate veterinary surgeon. If the man would confine himself to what he professed to be they would not be disposed to complain, but too often, when employed to do the simple operations to which he had referred, the castrator did not hesitate on gaining an *entrée* into the farmyard, to venture to do that which the veterinary surgeon would hesitate to do, bearing out the old maxim that "fools will rush in where angels fear to tread." Mr. Simpson held that an unregistered man who castrated was an offender under the V.S. Act, inasmuch as he practised veterinary surgery, and the Act distinctly said that no man should assume any title which would lead the public to suppose that he had any special qualification to practise veterinary surgery.

Amongst those who took part in the discussion which ensued were Messrs. Hill, Barford, Professor Pritchard, Mr. Walker, the Secretary, Professor Robertson, Messrs. G. A. Lepper, Darling, Irving, and Mellett.

One of the principal points raised was the question of who should prosecute men of the class referred to by Mr. Simpson if they were considered to be offenders under the Act. The reluctance of local people to undertake the task was pointed out, and also the difficulty experienced by the Council in getting such people to give evidence in cases which the Council desired to take up.

Professor ROBERTSON, confining himself more closely to the resolution, said there was a difference of opinion as to whether a man who called him-

self a castrator was an offender against the Act of 1881. He did not think the Act was intended to prevent a man calling himself a castrator, for the Privy Council was exceedingly adverse to tampering with vested interests. They might,consider themselves fortunate in obtaining the Act as they did in the short hours of the morning at the end of a Parliamentary Session, when it might have been blocked. They had to give something for what they had got, and he apprehended that this complaint against the castrators would not be considered by the Privy Council, and it had better be left alone, for he thought it was a weak case. Knowing what the opinion of the Privy Council was when the Act was framed, he did not think it was intended to exclude castrators. At the same time he did not think they could prevent any man from acting as a veterinary surgeon. According to his idea the Act only protected the title (*vide* clause 16 of the V.S. Act).

Professor PRITCHARD partly endorsed Prof. Robertson's remarks. They all knew, as Mr. Barford had said, that hundreds of persons, prior to the obtaining of the Act, performed the operation of castration; but if those persons had come forward and shown that they had been in the habit of performing this operation, they could have been registered, and no one could have stopped them. He thought, however, with Mr. Simpson, that a test case should be taken, as they would then know exactly where they were. There could be no doubt that the operation was a surgical operation, and it belonged to the veterinary surgeon more particularly than to any other medical man. And if he were to be protected in one thing he should be in another. If a man termed himself a castrator, and was allowed to go into the farmyard and insinuate himself further, it was robbing the veterinary surgeon of his bread and cheese. They ought to know whether they were within the bounds or without them. A test case would not cost very much money, and he should be happy to subscribe towards it.

Mr. LEPPER thought that if a case went before the Privy Council, they would translate it very liberally, and would not grant a case against the castrator.

The motion of Mr. Simpson (Maidenhead) having been seconded by Mr. WALTER (1st Life Guards), was put and carried *nem. con.*

The Title of Veterinary Surgeon.

Mr. WALKER (Oxford) moved the following resolution: "That this Association, being of opinion that it is illegal for unqualified persons (even although registered) to call themselves by the title of veterinary surgeon, would ask other societies to co-operate for the purpose of ascertaining, by means of a test case or otherwise, whether it is so, and whether such persons can be prevented from so doing. He laid before the meeting what he considered was the interpretation of the Act of Parliament on the question. To his mind, he said, it was clearly defined by the Act who were entitled to call themselves by the title. A veterinary surgeon and a member of the R.C.V.S. meant one and the same thing. He was of opinion that a veterinary surgeon was a person who had studied at one of the recognised colleges, conformed to their bye-laws, passed certain examinations satisfactorily, and so become entitled to the name, and him alone; whereas the unqualified registered man was only registered as an existing practitioner, and recognised by that title, and was no more entitled to call himself a veterinary surgeon than the unregistered man.

In the discussion which followed, Mr. HILL pointed out that the Privy Council had ruled that the "existing practitioners" were, to all intents and purposes, veterinary surgeons.

Mr. SIMPSON (Maidenhead) held an opposite view to the Privy Council, and said that the arguments Mr. Walker had that afternoon used were un-

assailable. The Act throughout rang with a distinction between a M.R.C.V.S. and an existing veterinary practitioner. He did not think it was of any use, however, to ask for a test case.

Mr. KIDD seconded Mr. Walker's motion. If, he argued, a registered practitioner was entitled to call himself a veterinary surgeon, and place himself on an equality with a M.R.C.V.S, why had he not a right to a seat or a vote at the Council?

Professor ROBERTSON said the Council had all been of the same opinion, but the Privy Councillors were the sole interpreters of the Act.

Mr. WALKER withdrew that part of the motion referring to the test case.

Mr. VERNEY thought both proposer and seconder were in error. He thought the existing practitioners were entitled to all things under the Act, with the distinction that they were upon a separate register.

Mr. WALKER said it must be a mistake to register these men as existing practitioners; if they were veterinary surgeons at all they should be registered as such.

The motion was put to the meeting and lost.

Stable Management.

This was the subject of a lecture which Professor Pritchard had promised to give, but owing to the length of the discussions the lecture had to be postponed.

Professor PRITCHARD kindly promised to give the lecture at the next meeting in November.

A vote of thanks to the Chairman was proposed by Professor PRITCHARD, seconded by Professor ROBERTSON, and supported by Mr. SIMPSON, of Windsor; and the last-named gentleman, referring to the discussions which had taken place, assured practitioners that their interests were not ignored by those representing them at the Council.

The CHAIRMAN, in reply, said that whilst they could call their meetings three times a year, and get such a number of the members of the profession together who were able, with kind and goodly feeling and good common sense, to take up questions of importance such as those of that and previous occasions, they might rely that one of the objects of their association would be achieved—and that was to do good to the profession at large, and not alone to themselves.

The proceedings then terminated.

H. KIDD, *Hon. Sec.*

SOUTHERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held at the Bull Hotel, Rochester, on June 26th, Mr. J. B. Martin, of Rochester (President), taking the chair. Several visitors attended the meeting; among them was the Mayor of Rochester (Alderman Woodhams).

The PRESIDENT delivered his inaugural address as follows :—

In accepting the office of President, it is usual to address a few words to the members of the society; and I may say at the outset that if I had been present at the last meeting, when the officers were elected, I should not now be assuming this responsibility, as every man, in taking office, should have confidence in his ability to carry the duties out efficiently. Now I feel quite conscious of my inability to do this both to your satisfaction and my own; at the same time, I do not wish to shirk my share of the work and responsibility, as I know in being elected President is the greatest honour we can confer upon each other. This I fully recognise and appreciate, and sincerely

thank you for the confidence reposed in me, and I shall endeavour to infuse that enthusiasm, zeal, and energy into the members of our Association which is so much needed, as it is by each individual effort, and each member taking that deep interest in the advancement of the profession, that we can ever hope to make any progress. Most of the work is left to a few workers, while a great number of the members have no higher aspirations and ambition than the £ s. d. element. I confess it is difficult to understand the apathy and supineness existing among the profession, and wonder must be expressed at the members not making some sacrifice in order to attend the meetings more frequently, and entering into the discussions of the different subjects brought before us. A proof of this apathy was afforded at our last annual meeting in May. Not only are they dead to what is taking place, and absent themselves, but they do not even take sufficient interest in the progress of the profession to record their votes for the election of members of Council when voting papers are sent to them. In 1884 there were fifteen candidates for Council, six were successful, and recorded 3,972 votes; the total number of votes for the fifteen candidates was 6,167. Now in May, 1885, there were thirteen candidates, six being successful, and there were recorded 1,976 votes, showing a less number of votes for six successful men of 1,996 votes, and the total number of votes for the thirteen candidates was 3,154, showing a decrease of 3,013 in 1885 compared with 1884. Now we in the south must be up and doing, as all the successful men elected to represent us on the Council were gentlemen from the north, and not one from London or the southern counties; therefore it is absolutely essential that we should organise ourselves for the next election, and we must begin soon enough to even hope to cope and hold our own with our shrewd, energetic friends in the north, who have an immense numerical preponderance over us. I would suggest an amalgamation with other societies, *i.e.*, the London Central, Eastern Counties, and Royal Counties; that our next meeting be in London, and the Presidents and Secretaries of each be invited to attend. Our society was first formed with the laudable object of strengthening the hands of our indefatigable friend, Dr. Fleming, and to assist him in his untiring efforts to carry to a successful issue the Veterinary Surgeons Act, which never would have become law but for his courage, energy, and influence. This is a grand and noble example to other members of the profession to work for our advancement. Although he has his detractors, there has not yet been a man among us who has been so distinguished and recognised by so many leading scientific societies for his talent. I believe the accomplishment and success of this Act was really the cause of his recent illness, which we all deplore, for we feel the need of his presence and assistance at these meetings. The Veterinary Surgeons Act has been condemned by many because it has not produced the immediate effect they expected of suppressing empiricism directly it became law. The best mode of effecting this is to make yourselves proficient in science, and show the public your superiority in usefulness in our calling. Now the public do not understand the meaning and working of this Act of Parliament. When the Bill went before Parliament, they would not allow, nor did we wish, that the unqualified man should be prevented following the only means he had of subsistence, which would be cruel; but it was made lawful that those who had been in practice five years should be able to register by paying a fee; and it is quite natural for those men who had thus qualified themselves to take advantage of and turn to account the privileges gained; they give evidence in courts of law now, and swear they are properly qualified veterinary surgeons. This is the point the legitimate man complains so bitterly of as he is identified with the quack, and suffers in reputation.

A case in point occurred about two months since. A farmer was sum-

moned before the magistrates for having sheep on his farm afflicted with Scab, and failed to give notice to the Local Authority of the existence of this contagious disease; the veterinary inspector gave his opinion that they were so affected. And it is a fact that they came from a district, a few months before, where another veterinary inspector had declared them affected with Scab; but in court an unqualified man, who had not even registered, swore on oath that he was a member of the Royal College of Veterinary Surgeons, Edinburgh. Of course we know there is no such an institution.

He gave evidence that the sheep were free from Scab, and the case was consequently dismissed; and under ordinary circumstances these diseased sheep would be at liberty to go to any public market and disseminate this contagious disease, and the veterinary profession would be identified with this man and so suffer in reputation. It is said that in all Acts of Parliament a coach and four can be driven through them, so we must submit to these annoyances and anomalies and take a higher view. As we must make certain sacrifices, it is gratifying to know we exerted ourselves with the laudable object of leaving the profession better than we found it, and the future generation of veterinary surgeons and the public will be benefited.

These are matters affecting the prosperity of the farmer, and I think they and the public should be invited to attend our meetings, and enter into the discussions on the different subjects, and give them an opportunity of telling us of our shortcomings. Veterinary medicine and agriculture are kindred sciences, and their interests are very closely connected; and the closer their union the greater will be the advantages derived from each, as the veterinary surgeon can give valuable information on the injudicious breeding and feeding of stock, for on the health of his cattle depends largely his success, for high farming on different soils has a very injurious and poisonous effect—especially on sheep, of which hundreds die from this forcing system; and it is of the highest importance that we should both understand the laws of nature, in order that we may know the why and the wherefore of all our actions, and not be groping in the dark. We should do things on scientific principles, and if there is failure, we should search out the cause and know the reason; and we should not go on doing things merely because our fathers did so before us. I think we can prove to the public that we are a useful profession, and especially to the farmer, whose prosperity we have enhanced; for the veterinary inspectors, during the prevalence of certain contagious diseases, were instrumental, as far as their skill and knowledge extended, in lessening or suppressing, if not entirely eradicating from this country, these terrible disorders which have been so destructive to our flocks, and consequently ruinous to our stock-owners. We, travelling all over the country to every farmyard and marsh in our respective districts, and seeing all the cattle, and particularly those affected with contagious diseases, are in a position to supply practical facts and such important information to the agricultural department of the Privy Council as to enable it to issue those Orders in Council which were so ridiculed as useless by butchers, and some farmers and dealers, because they were restricted in the movement of their cattle, which inconvenienced them; we now see the beneficial result of these orders, as at the present time the diseases of cattle have been reduced lower than for the last thirty years. The Orders in Council for a long time were very loosely carried out, and that rendered them worse than useless. I will quote one case of many. Contagious Pleuro-pneumonia declared itself at a farmer's. I visited, and found twenty young bullocks; three were affected with this malady. I recommended that the whole of them should be slaughtered; they were all sold to a butcher for that purpose. The superintendent of police had the entire control of them, to see them slaughtered; about ten

days afterwards I visited two other farms, eight miles apart, where the disease had developed itself. I at once recognised these bullocks again : ten had been sold to each of these farmers by the butcher, which I ascertained on questioning the foreman to the butcher. I will make no further comment upon it. The agriculturists are rapidly improving themselves in education and general intelligence : they have their clubs, and engage scientific men to lecture and to instruct them on scientific subjects. So much has this been the case, that although our profession has made rapid strides in the last twenty years, the farmer will outpace us if we are idle. From this the Council saw the necessity for a more rigid matriculatory examination of the candidate for admission to the veterinary colleges, and this step has shut out some who are educationally unfit to enter our ranks. There is, undoubtedly, a great improvement in the quality of the young men who are now entering the profession, the matriculatory examination being conducted by an independent body like the College of Preceptors is a proof that each pupil is proficient in his education ; there has been considerable discussion upon the examiners rejecting so many students ; both the professors and examiners have been condemned. The examiners have a very difficult duty to perform, both to the student and the public. I am sure they are animated by a desire to conscientiously conduct the examination in a spirit of fairness and justice, and are entitled to all our praise and confidence. I think it rests with the student himself, as there are many who pass their examination who are a great credit to the professors. Ninety-nine out of every hundred who are rejected are so because they have not worked ; and if they applied themselves assiduously to their studies they would rarely be rejected. If the examiners do not consider them proficient, it would be unjust to the public and a disgrace to the profession to grant them their diplomas. What is most damaging and most calculated to ruin the young man fresh from the country is the first session, in his not having a sufficient number of lectures, and his whole time occupied ; this induces him to seek some of the pleasures to be found in London, and he thus contracts habits of indolence and enjoyment. It is harder to unlearn than it is to learn. There has been for several months a rather hot and violent discussion on the ninth clause of the Supplemental Charter, framed for the purpose of excluding all those members who have not the Fellowship degree from sitting on the Council or Examining Board. The Fellows have shown a little bitterness, as they allege they are being robbed of what they were promised and contracted for, but there need not be any antagonism, as both Fellows and members should work as one man, with one common object, and that to advance the interests, promote the welfare, and raise the status of the profession; they must co-operate in a friendly manner, and get the grievance altered. No doubt when the then existing Council obtained the Charter, they were animated by a sincere desire to improve the quality of the profession, and it was disappointing to find so few studied to obtain the Fellowship degree. There are a great number in practice whose whole time is occupied, who could not spare time to study, nor would they care now to submit themselves to an examination ; and there are many who do not aspire to the honour and dignity of either examiner or Councilman. And although the Council did take the money and enter into a contract with those who obtained the Fellowship degree, I do not believe the Fellows themselves would like to take the responsibility of conducting the whole business of the profession, to the exclusion of all the sound, thinking men of experience whose whole life has been spent in studying the best interests of the profession, who know the practical working of it in all its details and all its wants, who are entitled to our best thanks for the miles they have travelled to attend Council meetings, and the time they have devoted to transacting our business. Very few knew of the existence of this

9th clause, till some one discovered it and brought it before the profession, which roused it from its slumber just as it was coming into operation. It will have a good effect, as most probably after this agitation members will apply themselves to study to obtain this degree and enjoy its privileges, but in the present temper of the profession upon this question, it is almost its unanimous opinion that by forcing this clause against its will and wish it will have an injurious effect. Then we must ask the Council, who represent the feeling of the profession, and in whom we have every confidence, if not to alter this objectionable clause, to suspend its operation until the profession is ripe to accept it. It would be premature to press it forward just now. I think that will satisfy both members and Fellows. I think that all veterinary societies similar to ours should form a committee to which to refer all cases of dispute, as frequently legal cases are tried before different tribunals in courts of law such as magistrates, judges, corporations, when it has been rendered very difficult for them to decide on which side the truth was, or which the correct opinion to guide them. When veterinary surgeons and medical men give such conflicting evidence, and often one-sided, leaning very much to their clients, that has been so clear and palpable that very little importance has been attached to it. This has happened more in giving evidence both for and against the Society for the Prevention of Cruelty to Animals. The veterinary profession generally have complained of the action taken by the Society, and written a great deal about it. I claim for the veterinary surgeon an innate love of all animals, from the fact of his choosing the profession as a vocation, and his constant endeavour to protect them from any unnecessary pain or wanton cruelty, and to ameliorate their sufferings; and being almost brought up, practically, in a manger, he is acquainted with all the different tempers, idiosyncrasies, manners, vices, and weaknesses of horses, and they are as numerous and various as in the human race. The horse is more intelligent than some of the ignorant, brutal men who drive him. The veterinary surgeon is constantly mixing with different men who have the management of horses and cattle, and witnessing many acts of cruelty; and having an opportunity, when occasion requires, of reasoning and instructing these men perpetrating the cruelty. It is intensely painful to witness some impatient ignoramus knocking a timid horse about the head with the butt end of the whip, and the blacksmith in the forge beating a horse with a hammer, because the animal does not understand what he wishes him to do, and the horse flying all over the place from nervousness and fright; ultimately this animal becomes vicious and kicks, as the only means of protecting himself is his heels and teeth, whereas with a little kind treatment he would gain confidence and become as docile as a lamb, and do anything you ask him to do. Therefore we as veterinary surgeons are desirous of assisting the "Royal Society for the Prevention of Cruelty to Animals" in suppressing cruelty to all animals, or any local society, either in or out of a court of law. We refrain from giving evidence in courts just for the fee, as there are too many cases taken before the magistrates that ought not to be. The object of the Society should be to protect the animal from cruelty by their acts and advice, and when that is attained, that is all that is required. The Society exercises a deterrent effect on the public, for fear of being summoned, and publicity given to acts of cruelty, a disgrace most men feel. The Society should not take trivial, unreasonable, and trump up any case just to keep its name before the public, and record as many successful prosecutions as they can, just for their annual report, as in each report we see very little diminution in the number of the same description of cruel acts: the same number of worrying cats, sore shoulders, etc., etc., every year. One would suppose, with their vigilance and energy, the number would be lessened; the only conclusion we can come to is, there must be cases trumped up. The

fact is, there are officers in nearly every town, and they have to report themselves every night to Mr. Colam where they have been and what they are doing, in order that he should know they are doing something. Any trifling case of Mange, Grease, lameness, etc., is fixed, seized upon, and summoned, and it is generally a man in a needy position whom they attack; and then to hear the exaggerated statements of the inspector on some trifling wound has astounded me, so that I fancied it must be another horse they were describing. Their excessive zeal and anxiety to win a case amounts sometimes to vindictiveness, which frequently brings the Society into so much disrepute, and the public are disgusted. If there should be any opposition, Mr. Colam will spare no pains, trouble, or expense in establishing a precedent, and he will send a veterinary surgeon of eminence to oppose some provincial veterinarian whose mind is fully made up, and he is prepared to give evidence in favour of the Society, and if it were not so it would be useless sending him down. The Society is rich, and has vast influence, and can command the best talent. If a case of suspected cruelty is stopped on the road by an inspector, the driver and owner are cautioned, and they cease to work the horse until fit, I think the object for which the Society was formed is attained and ought to satisfy the officers, and in cases of doubt the veterinary surgeon's opinion is not sought for unless his opposition is apprehended. For my own part, I always support the Society, or never oppose it, in real cases of cruelty, and in cases of persecution of some poor man, I am just as determined in protecting him. Magistrates always favour the Society, particularly those who know very little of horses. A few months since, two teams of horses were stopped working just in a busy time of the year, because of sore shoulders; it was a thin skin grown over old wounds, and when at work there was redness seen through the thinness of the skin. The horses were quite fit to work. The magistrates were two colonels and a clergyman. I advised the farmer, who was not a client of mine, to take the horses for the Bench to examine, and after putting their glasses on and inspecting the shoulders some time, one said, Here is a small wound; that is cruelty; and fined the owner £5. Such cases bring the Society into ridicule, and cause disgust in all practical, right-thinking men. The Society has a noble duty to perform, and it is a pity they are allowed to abuse its objects. The subject of Spavin is perhaps not so interesting to the public as such subjects as milk, affecting the health of the human subject. In all towns where our meetings are held, medical men should be invited to attend and discuss such matters with us, as we can afford great insight into the diseases of the human race. Continental veterinary surgeons have proved beyond all doubt that Consumption is produced in children from their being fed on milk from cows affected with Tuberculosis. There are many instances—I know of one in these towns—where a milkman has had Scarlet Fever in his family; the germs of the disease were absorbed by the milk, and thus the malady was conveyed to most of those who partook of the milk. Many other contagious diseases are communicated in the same manner. Castrating female pigs is a simple operation; but would it not throw some light, and materially assist the medical man in operating on women suffering from incipient or early stages of Cancer of the womb?

I will not weary you longer with these disjointed, commonplace remarks; but these meetings have given me infinite pleasure in making so many professional friends, cordially grasping their hands with feelings of sincere friendship, which have superseded those feelings of distrust and jealousy that may have once existed. We have greatly benefited by exchanging ideas on professional matters; we are indebted for many instructive papers read by many gentlemen; that by Professor Pritchard on Curb, Dr. Fleming on Actinomykosis; Mr. Edgar on Swine Fever; and Professor Axe in his

exhaustive scientific and complete lecture at the Central Society on Azoturia. We cannot over-estimate the knowledge gained by the lectures given by these gentlemen, who are superior to most of us in intellect and in intelligence, and who are willing to apply themselves to scientific research for the benefit of the members of our profession, and elucidating some of those new diseases that occasionally crop up, thus enabling us to treat them with confidence and explain their nature with clearness to the public, whose respect and confidence we wish to obtain, and to which the nature of our profession, when properly pursued, gives us so legitimate a claim.

(To be continued.)

LINCOLNSHIRE VETERINARY MEDICAL SOCIETY.

A MEETING of the above Society was held at the King's Head Hotel, Louth, on June 11th, 1885. The President, R. T. Hardy, Esq. (Sleaford), in the chair.

The TREASURER (Mr. C. Spencer) presented his annual report, which showed a balance in hand of £21 11s. 2d.

A discussion arose as to the purchase of instruments.

Mr. MACKINDER said this question had been put off from the last meeting because they did not know how they stood financially. He thought lithotomy and tooth instruments were very necessary, and should be kept by the President for the time being.

After a short discussion it was decided that a committee be appointed, consisting of the President, Secretary, and Mr. Mackinder, to be empowered to spend a sum not exceeding £12 in the purchase of instruments.

It having been decided that the next meeting of the Society should be held at Spalding, on the 2nd Thursday in October, the PRESIDENT delivered his inaugural address as follows :—

Gentlemen,—It is a pleasure this morning to thank you for the great honour you have conferred upon me by electing me your President for the ensuing year. I assure you that no effort on my part shall be wanting in furthering the interests of this influential association, and I hope that when my term of office shall expire, I may retire from my post with a consoling reflection that I have done everything possible to accomplish and promote the interests of the association. This association is commencing its third year ; we have a large number of subscribing members, and I invite you to assist me in securing new members to keep the Society in the position it is likely to occupy. I may add that all veterinary medical associations are formed to promote a good and friendly feeling amongst our professional brethren, and I ask you to let us have the meetings well attended, and plenty of topics for discussion, and let those discussions be carried on in a gentlemanly spirit and free from jealousy, not forgetting we are all working together for the good of our profession. I will not detain you any longer, gentlemen, as time is getting short and we are to have a very elaborate essay from Captain Russell.

An interesting paper on "Some of the Diseases and Accidents connected with Parturition" was read by the Secretary on behalf of Captain Russell, of which the following is an abstract :—It was a surprising fact that the effort of parturition should be so frequently attended with serious results ; merely an effort of nature, not the result of disease. But in the majority of cases no doubt those difficulties could be traced or were due to alterations in structure brought about by the necessarily artificial existence of the animal in a state of confinement, or at least unnatural existence. The first subject he desired to notice, was the existence of tumours within the structure of the uterus or in the vicinity of the vagina. They varied in shape and position, and a careful examination was important, with a view to determine the characteristics of the tumour. Fibroid and cancerous tumours were generally situate within

the uterus. Papillomatous tumours were most frequently found in the vagina. Manual examination could alone determine what was to be done in any case. Rigidity or spasm of the neck of the uterus was not unfrequently met with in the cow or ewe, which was not due to any disease, but rather to an irregular action of the muscular fibres. In all ordinary cases the fingers of the operator, with time and patience, would overcome all difficulties. Induration of the cervix was in reality entirely due to a diseased condition of the parts, and was the consequence of injury to the parts during delivery. The latter operation was most safely to be accomplished by the use of an instrument invented by Professor Walley. Carelessness in the operation was the cause of nine out of ten cows or mares being barren. Another accident arising from the act of parturition was rupture of the walls of the uterus, which might be induced from a diseased condition of the parts, or by the efforts of the fœtus. Many cases could be traced to the carelessness of the owner of the animal in not seeking professional aid soon enough. Rupture of the vagina occurred in different aspects. Accidental or rough treatment, prolonged labour, causing the parts to become dry, were frequent causes. When the rupture was superiorly placed a recovery might be effected, but where it was laterally placed, such rarely was the case. For inversion of the uterus, a truss was about the best thing. Inversion of the bladder—more common in the mare than in the cow—if taken in time could be easily replaced. Retention of the placental membranes was of common occurrence.

Whole volumes had been offered the profession upon Parturient Apoplexy, and yet, apparently, they were in ignorance of the cause of the terribly rapid and speedily fatal complaint. The pages of the veterinary journals teemed with theories as to the cause, and proper treatment to be pursued, but one might have a case which would explode all theories, and leave one hopelessly in the dark as to the cause. In his opinion the cause was to be found in the artificial life the cow—the disease rarely affected mares—was exposed to from birth. In nearly every case the animal had been allowed to gorge a quantity of indigestible food, and kept from exercise at least a fortnight before the event. How many cases of cows left to get through their trouble in the field! Parturient Fever was apparently unknown in some parts of the kingdom, and was an every-day occurrence in others. The plan he recommended to prevent an attack was to give the cow plenty of daily exercise at least a fortnight before the event; not too much food of any kind, and if very fresh, a good purge about ten days before she is expected to calve. So soon as she has calved give her Mag. Sulp., Zingib., etc., according to size, weight, etc., allow no hay for three days, and keep her perfectly quiet and free from excitement. His general treatment in cases of Parturient Apoplexy had always been fairly successful.

The SECRETARY concluded by thanking those present for their patient hearing.

The PRESIDENT: I cannot invite you, gentlemen, to ask questions upon this paper, as Captain Russell is not present. I shall be glad to hear any remarks that may be made.

Mr. FIELD: Can you explain, Mr. President, how it is some districts are so much more liable to parturition diseases than others?

The PRESIDENT: As far as my practical knowledge goes, the better they are cared for the more liable they are to such diseases, and the majority of cases are in better bred animals. If I go into a yard where there are a lot of animals badly cared for, there we have very few cases.

Mr. SMITH: I find many cases where special districts are subject to these diseases.

The PRESIDENT: Do you find it in Alderneys?

Mr. FIELD: I think shorthorns are more subject to it.

The PRESIDENT: In some cases if kept in a good pasture they go down.

Mr. FIELD: Keep them on oat-straw. Give them a few lbs. of cake.

Mr. SPENCER: Do you find Alderneys have it worse than shorthorns?

The PRESIDENT: Yes; more, in my experience.

The SECRETARY: The better the animal, the more subject to this disease. It is accelerated also by artificial selection, breeding in and in.

The PRESIDENT said he had attended a number of cases of Parturient Apoplexy, and most of them got better. He treated them very much the same as Captain Russell. He gave a strong purgative, stimulated the spine by douches of cold water to the head. He was a very great advocate for giving treacle and sulphate of magnesia and aloes. If it was a very bad case, he gave whisky, and followed it up with doses of carbonate of ammonia.

The SECRETARY: Turpentine is a very good thing.

The PRESIDENT recollected a cow taking a quart of whisky.

Mr. FIELD said he frequently gave a bottle of whisky, and followed it up with half-ounce doses of Carb. Am.

The PRESIDENT: There is one result I should like Captain Russell to have mentioned—protrusion of the rectum in mares.

Mr. MACKINDER said: Nine times out of ten, if it had been out a little while the mare would die. You may put it back but the mare will die.

The SECRETARY said he had a case in his practice where the foal was presented with its legs crosswise in the passage, and the vagina was lacerated very much. It went right through the mucous coat and formed a cul-de-sac. He gave the mare iron and quinine, and a solution for local application of corrosive sublimate, 1 in 800. He found the greatest good from that.

Mr. MACKINDER said he should not like to use the corrosive sublimate.

The SECRETARY: It is an excellent antiseptic from 800 to 1000. I have used it for a long time now.

Mr. JAS. SMITH said he had a great opinion of carbolic acid. Many of these cases had paralysis of the spine.

Mr. SMITH said he had seen that in many cases and where the thigh was completely wasted away. In the case of a mare which had partial paralysis the symptoms were symmetric, not more on one side than the other.

Mr. MACKINDER: You never get a case of Parturient Apoplexy when there is a difficult case of parturition.

Mr. SPENCER said he should like to ask if they bled these cows when plethoric.

The PRESIDENT: If ever you get them before they are down. We have had recourse to bleeding in those cases, and it has relieved them very much.

Mr. JAS. SMITH: We had very good results from the cow at Burton.

The SECRETARY remembered a bad case in which a cow recovered after being bled freely. He asked if any theory could be offered as to the partial paralysis in the mare to which he had referred.

Mr. MACKINDER recorded the use of nux vomica and iodide of potass in dram doses, with three drams a day of nux vomica.

Mr. SMITH said he had been very successful with a brisk purgative, followed up by nux vomica and treacle.

The PRESIDENT thought treacle a capital diaphoretic. He asked if any one had ever seen a heifer down with Parturient Apoplexy with the first calf.

Mr. MACKINDER: I have not; but I have seen bullocks with every symptom of Parturient Apoplexy, when of course there could be no parturition. They had to slaughter one of those bullocks, all of which had been living upon grass, a full pasture. They went through all the stages just the same as a cow. There was considerable Tympanitis, and he attributed it to Acute Indigestion. He had pleasure in proposing a vote of thanks to Captain Russell for his valuable paper.

Mr. SMITH seconded; and the resolution was unanimously adopted.

The SECRETARY having read a letter from the Royal College of Veterinary Surgeons,

Mr. RUNCIMAN introduced his proposition as to the election of the Council of the Royal College of Veterinary Surgeons. He said that since the last meeting, when he gave notice of this motion, the subject had been well ventilated. He had not one word to say against either the Fellowship degree or the men who had taken it up. He himself was jealous of no one man, but he was jealous of a band of Fellows arrogating to themselves the whole business of the profession. He had no objection to a man tacking as many letters of the alphabet as he liked to his name, but it did not follow that they should all take it up. It had been taken up by some of the members of the profession, but as in all well-regulated assemblies, it was absurd that the small minority should rule the majority, and ask the members to give a vote for the Fellows, men whom he thought were breaking trust with them. It was said that this part of the charter relating to the election of Fellows only to the Council ought to have been appealed against at the time, but it was his opinion that the Council were breaking trust with them. When they passed the College, and obtained the diploma, they, as simple members, were as eligible as any one else for the Council. Let every man stand on his own merits. He could not see why a few members should arrogate to themselves the whole business of the profession. He had never canvassed any one to second his resolution, and if they thought it right that Fellows should do as was suggested, perhaps no one would second it, but he for one did not say so.

Mr. GRESSWELL begged to second the proposition, and quite agreed that the minority should not rule in a case like this. When they received their diploma they were constituted members, and signed the rules and regulations of the College, and he did not see they should be put out of the representation of the Council and Board of Examiners. He found, from the VETERINARY JOURNAL of October 4th, 1876, that it was thought that some of the members should have objected to this clause, and if they had known about it they would have objected.

Mr. RUNCIMAN said: Supposing they wished to run a man like Mr. Hardy, for instance, was he to be stopped?

Mr. MACKINDER, F.R.C.V.S., said he wished to speak to them rather as a member than a Fellow. In 1875, the year of the origin of the Fellowship, it was considered necessary by their Council to endeavour to raise the status of the veterinary profession. In doing so they had to look and see what the Royal College of Surgeons had done. They endeavoured to raise the status of their profession by establishing the Fellowship degree, and they made the same restrictions as the Royal College of Surgeons had, viz., that none but Fellows, after so many years, should be eligible for a seat on the Council or Board of Examiners. There was just the same disturbance with them as was now presented, but now the majority of surgeons were Fellows. He pointed out that the Fellows did not make this rule; it was done by the members themselves. The subject was brought forward by the Council, and the minutes were confirmed by a meeting of the members afterwards. The time had now come for this privilege to be exercised, and they saw now that they wanted to do away with it. This charter had been recognised by Act of Parliament, and could not be altered without going to Parliament.

Mr. RUNCIMAN: Then we will go, and pay for it.

Mr. MACKINDER said there were several objections beside that of expense, and he was present when this question was fully discussed in London, and some surprise was expressed that it should be brought up. He concluded by saying that he should propose a direct negative.

Mr. RUNCIMAN said he would admit that the Council was not elected with that view, but they sprung this upon the members altogether. They all wished to raise their profession as high as possible, but there were plenty of men who did not care anything for the Fellowship. It was a matter of paying so much. The best book to read for their Fellowship degree was said to be their cheque-book. He meant to substantiate his words by his deeds, and he thought they were able to obtain an Act of Parliament.

The SECRETARY read a few words from Captain Russell, in which he said that he did not aspire to a seat on the Council or Examining Board, but having obtained the degree, he meant to uphold his title and rights. He thought if this were rescinded it would be a death-blow to the profession.

Mr. RUNCIMAN failed to see how it could be a death-blow to the profession.

Mr. MACKINDER said it would show the people that they were not equal to the Royal College of Surgeons.

Mr. RUNCIMAN said it would simply show that a few members wanted to rule the profession in the teeth of the majority.

The SECRETARY pointed out that any one could go in for the degree after five years in practice.

Mr. RUNCIMAN: On paying fifteen guineas. I have nothing against the degree or the men who have taken it. I may ultimately take it myself, or try to take it.

Mr. JAS. SMITH expressed his desire for the Fellowship degree to be maintained, but not that part of it which only allowed Fellows to be eligible for the Council.

The SECRETARY suggested there might be some way of compromise. Supposing the members sent so many representatives, and the Fellows so many. To take the degree away would be a retrograde step.

Mr. MACKINDER said the same predicament arose in the Royal College of Surgeons, but it had now proved as successful as they prophesied it would be.

Mr. RUNCIMAN pointed out that there were many degrees and examinations in the Royal College of Surgeons, and they had been agitating for a long time for some central authority. The veterinary profession were one solid, united profession, and the medical profession were not.

Mr. MACKINDER said he should propose the time be extended five more years.

Mr. GRESSWELL could not see but that a member had the same vested interest as a Fellow.

The SECRETARY: When a man passes the higher degree it showed his fitness, and that he was keeping up with the times.

Mr. RUNCIMAN: Why should not a member be on the same level?

Mr. SPENCER scarcely saw what privilege a Fellow who paid his fifteen guineas got for his money.

Mr. RUNCIMAN: He might be thought a bigger man locally. The great majority of the people are very gullible with the alphabet. Perhaps he may get a little more practice through it.

Mr. T. SMITH said he certainly must support Mr. Runciman's proposition, and felt that many of the members were really more eligible as members of the Council than the Fellows to represent local country practitioners. He held that members should be on the same footing as the Fellows. A private member had quite as much right to represent them on the Council as they had to send him there.

Mr. MACKINDER: The same inducement was put forward by the Royal College of Surgeons.

Mr. T. SMITH said: Supposing a member had been in practice, he could, for the sum of fifteen guineas, go in for the Fellowship degree.

Mr. SPENCER: The Foundation Fellows only paid ten guineas.

The SECRETARY: I think the Fellowship degree fee is too much.

Mr. SPENCER concurred.

After further discussion, Mr. FIELD moved "That all members of the College previous to the passing of the Supplemental Charter should still be eligible as members of the Council, but all members of the Royal College of Veterinary Surgeons (except the Fellows of the Royal Veterinary College) since that time shall be ineligible."

Mr. SMITH seconded.

Mr. RUNCIMAN: I should be quite agreeable to withdraw my proposition.—Agreed.

Mr. Field's resolution was then put as a substantive motion, and carried by six votes to five, Messrs. Mackinder and Hartley voting against. On the suggestion of Mr. GRESSWELL, this resolution was ordered to be sent to the Secretary of the Royal College of Veterinary Surgeons.

A vote of thanks to the President closed the proceedings, the members afterwards dining together.

THE MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE fifty-fifth meeting of the above Association was held at the George Hotel, Nottingham, on June 19th, the President, H. M. Stanley, Esq., Birmingham, in the chair.

The SECRETARY read a letter from Mr. H. Read, Hon Sec. to Royal Counties Veterinary Medical Association, with reference to rescinding Clause IX. of Supplementary Charter, granted by Her Majesty the Queen on the 23rd day of August, 1876. The question was considered of such importance, and the discussion likely to last so long, that on the proposition of Mr. GREAVES, seconded by Mr. PARKER, it was unanimously agreed to adjourn to the next meeting, to be then placed upon the agenda.

Mr. G. A. BANHAM read a most able and interesting paper on "Bone Spavin," which was listened to with marked attention. The time being short, and a long and interesting discussion being expected, it was decided that this should be adjourned to the next meeting. At the express wish of the meeting, Mr. Banham consented to allow the paper to be printed.

A cordial vote of thanks was awarded Mr. Banham for introducing so important and interesting a subject.

Rugby was fixed upon as the next place of meeting. An excellent repast was afterwards partaken of, and a most pleasant and enjoyable evening was spent.

E. BEDDARD, *Hon. Sec.*

BORDER COUNTIES VETERINARY MEDICAL SOCIETY.

(*Continued from p.* 127.)

Mr. GREAVES then read the following paper:—

Fever in the Horse, more especially Sympathetic Fever.

Fever so frequently and seriously complicates most other diseases that its study is of the utmost importance to the practical veterinary surgeon—in fact, it may be said that its presence exists more or less, in one form or another, in every case in which there is any constitutional disturbance, from whatever cause that disturbance may arise. The proximate cause of Fever has been a subject of inquiry from the earliest times.

The horse is a subject endowed with the principle of excitability or a predisposition to excitement by means of a variety of stimuli. If these stimuli be below the mean rate of excitability it soon becomes exhausted and subsides. This stimulus, which gives rise to and often constitutes the remote cause of Fever, may be some miasm, contagion, septicæmia, or cold, producing, in the

first place, a rigor, or shivering fit; while this is being enacted a certain subtle influence arouses the energies of the brain, causes a disturbance in the constitution; the vascular and nervous systems are both excited; if it continues, its tendency is to concentrate its force in some vital organ, always preceding and giving rise to some of the various and well-understood complaints, such as Influenza, Strangles, Pathogenic Pneumonia, Tumour, Glanders, etc. Now this accumulation or concentration of Fever, this tendency to locate itself in some vital organ, is the most formidable enemy we have to cope with, and, if possible, to subdue or prevent.

Writers on Fever in the human being (Zymotic Fevers) have given us a great variety of forms or types of Fever, such as Typhus Fever, Enteric Fever, and Relapsing Fever, frequently arising from septicæmia, insanitary conditions, impure or sewage water, often from milk impregnated with sewage water or contagium (which is a living thing). The period of incubation is usually ten to twelve days; even the exhalations from discharges from the bowels of Fever patients will produce it. They have divided and sub-divided Fever until one gets mystified in the vast intricacies of its many bearings, and in order to avoid some very tedious and not very useful descriptions of the more protracted forms of Fever, I propose in the following remarks to simplify and make clear the pathology of Fever as much as possible. Fever in the horse is nearly always caused by his taking cold, or by inhaling impure air, or from septicæmia, which taints the blood. It is my belief that the many varieties of Fever are essentially one and the same; the particular type is determined by the various causes, some of which, I am convinced, have, up to the present time, entirely eluded our observation. Some of them have a peculiar depressing effect upon the action of the heart, and this gives a peculiar character to the Fever, which lessens the amount of the reaction, or abridges its duration; it must always be looked upon with suspicion, as it often advances insidiously, and may be looked upon as a state just on the eve of an attack of severe inflammation of some important internal organ. In active Fever we have one continued train of preternatural action and exhaustion until the system is completely worn out: as the Fever advances so does emaciation, and strength becomes more or less prostrate. Some constitutions have less power of resistance than others, and must more easily fall victims. Their natures seem unable to make an effort to contend against disease when it sets in.

It is my intention in the following remarks to consider my subject under two main divisions, viz., 1. Fever which may be called initiatory or idiopathic; the other, Sympathetic Fever, which arises altogether from some definite local cause (never spontaneously in an otherwise healthy and sound constitution).

I have said that Fever can be propagated in the system from a variety of causes; that it may exist in some constitutions for an indefinite short period unperceived; that it is insidious and stealthy in its progress. What I mean is this, a horse may take a cold to-day, or he may imbibe a poisonous miasma to-day, or he may have been imbibing it for weeks and months; its effects may be lurking in the system in a state of incubation for many days, unperceivable even by an experienced and observant horseman, its subtle influence is going on doing its work. In some horses the appetite may not be affected; its general appearance may not undergo any change for several days; then he begins to be dull and heavy, is sluggish and leaves his food. At the very first indication of ailing he may be stopped from his work and a veterinary surgeon be called in, who pronounces it a case of Fever, finds pulse sixty or seventy-two, mouth hot, hanging head, ears cold, respiration accelerated, temperature elevated, etc., etc. *The veterinary surgeon says this horse has been ill for several days;* he is ready to disbelieve the groom, horse-keeper, or driver who contends that nothing was the matter before this morning. I

grant you that many horses may be stopped which ail but very little, and are soon well again ; but what I want to call your attention particularly to is this, that this Fever may have been in him for several days, but in such a subtle and insidious state as to be undetectable by the ordinary means. I should like to use some phrase which would convey my exact idea—make my meaning absolutely clear. Probably, aye, very probably, if the pulse had been carefully taken and the thermometer employed, the two adjuncts would in all probability have detected that an excitability or disturbance was in existence many days before, though quite unperceivable by other known means. Now this is the time, the precious time, this time is inestimable, and if overlooked or neglected it often happens his doom is sealed. All this may be quite true, nay, is quite true, and if the horse had been in hand then, and means had been resorted to to arrest its progress at this critical moment, before it had accumulated or settled in some vital organ, many a valuable life might have been saved ; if we could only become possessed of this knowledge it would become invaluable to us, but then who could expect the attendant to be taking every horse's pulse and ascertaining the temperature every morning before going out to work, when, to all outward appearance, the horse at the time was in perfect health ?

I ask this Association to assist me in devising some means of ascertaining with some degree of certainty the earlier stage of existence of this hidden Fever—some improvement on the means we have now at our command, like unto a lever to lift the veil which keeps us from the light. Of course, a man of large practical experience is not alarmed when called to a simple case, but it behoves us to be always on our guard, and always vigilant ; a common interest requires us to make an effort, and to act our part. I have found that the application of strong blister ointment, or mustard, frequently applied to the sides, where the pleura or the parenchyma of the lungs has become involved, often does much more harm than good ; let us inaugurate some improvement in our diagnosis and in our treatment which will benefit our profession and be an advantage to posterity—remember, our day of opportunity will soon be past. The thermometer can discover a deviation from health twenty-four or forty-eight hours before the pulse will indicate it. Another thing must not be overlooked, viz., that one horse is much more susceptible to the effect of disease than another horse, that is, one horse has finer feelings, a more delicate and sensitive nature than another ; for instance, we will suppose that two horses are subjected to the same cause, exactly at the same time, and precisely to the same extent, one of them shall show illness twenty-four or forty-eight hours before the other, and the one shall give up almost at once, whilst the other may throw the effect off completely, or he may keep to his eating and working days after the other has given up ; at last he yields to the effects, and it proves a more difficult case, is in greater danger, and more likely to do badly, because the Fever has had time to accumulate, and has concentrated itself to a greater extent than it has in the other case. I maintain that these zymotic diseases may be entirely done away with by minute sanitary precautions (here Mr. Greaves read an extract from one of his papers on Enzoötic Disease, page 333 of VETERINARY JOURNAL for 1883). Another thing I have observed, and I wish to hear the opinion of this meeting upon it, viz., whenever we have a Fever prevailing in a district—say, if you will, Influenza Fever—we have cases in all directions which we visit daily, we shall find that some days almost every patient in every quarter appears a little better, and on other days we find that almost every patient in every quarter appears a little worse. Now, how is this to be accounted for ? Is it from some different electrical condition in the atmosphere at one time than at another time ? Then again, I want to point out another thing in these Fevers and their results. The great tendency in the horse is for these Fevers to locate or accumulate in the lungs

or pleura, just the same as vesicles in the mouth and feet in cattle is a consequence of a certain Fever existing in the cow at the time. Now, previous to fifteen or twenty years ago, the result of nine out of ten of these Fever cases that terminated fatally was Hydrothorax; since then, nine out of every ten of these Fever cases that end fatally have resulted in stinking breath, breaking up of lung tissue, vomicæ, and no Hydrothorax. We have the same class of horse, the same work, the same hours, the same water, same stables, etc. The only thing I can think can account for this change of type of disease is an alteration that has been made in their diet. English beans have been discontinued, and Indian corn has been substituted.

Now, in these enlightened times a more comprehensive spirit pervades medical studies, the animal frame is allowed to exhibit pretensions superior to the inanimate, and not only be governed by powers of its own, but by powers which are continually and systematically, from a given point, operating for the preservation of health, where it exists, and to a restoration of health where it has been lost or injured. The complexion of some constitutions is such that their natures can make a noble stand against disease, it makes a protracted and violent struggle for life, and often lives it out. It is in the perfecting of an idea, in the working out of a thought, in the persistent application of our knowledge, that a man's sterling efficiency is made manifest; years of patient and unremitting toil to bring about a thoroughly established reputation and ensure success in these kind of cases; when Fever has existed many days, pulse keeps up to 72 or upwards, and thermometer indicates 102 or 103°, the diminished energy extends its influence over the whole system, and occasions a universal debility. This debility is exerted chiefly over the extreme vessels or capillaries.

Treatment of Fever.

My method of treatment is to place my patient in a cool, airy, loose box: let him be well-clothed, get his ears warm, and see that they are kept warm, fed on mashes, leave a bucket with bran-tea before him, give him also cold water with nitre in it, carbonate ammonia balls, belladonna and camphor balls, aconite, fever drinks, whisky, etc. If soreness in the lungs or in the pleura is detected or apprehended, I stimulate the sides and employ hot cloths (that is, a large horse-cloth wrung out of half-scalding water) over the chest; if his breathing is accelerated, I may insert a rowel in the breast; if his bowels are confined, he must be raked and glystered frequently—I often burn nitrate of potass powder on hot cinders in the box daily. This, in many cases, acts as a direct sedative to the respiratory organs. If our patient has a tolerably strong pulse, blood-letting is occasionally resorted to with marked benefit. This in many cases acts as a direct sedative to the respiratory organs. But if Pathogenic Pneumonia or Pleurisy has set in and has existed some days (say fifteen or twenty days), you may adopt whatever method of treatment you like, but in the majority of these cases the patient must die. All do not die: it is pleasant to turn our eyes for a moment from gloomy to brighter scenes—these delights are attainable in some cases of recovery. I have been an eye-witness of various systems adopted by different veterinarians. I have found that those who have recourse to the most heroic treatment, that is, setoning the sides and breast, blistering severely breast and sides with blister ointment, or mustard frequently applied, have the least percentage of recoveries.

Post-mortem Examinations.

In making *post-mortem* examination of those cases that die, which, in the majority of cases, will take place from fifteen to thirty days after they are stopped from their work, though *post-mortem* appearances convince you in many cases that disease must have existed a much longer period, we often

find appearances malignant and extensive beyond what we expected to find. Perhaps the horse has died before twenty days have elapsed since he was stopped, and we find the chest full of water, lungs adhering to the ribs throughout the whole extent of both lobes of the lungs, and large quantities of coagulable lymph, the whole pleura costalis and pulmonalis completely covered with flocculi ; it is natural to conclude that the case has been going on for a longer period than stated. Possibly the remains of some previous attack of Acute Pleurisy, but unless the adhesions are organised, that is, the blood-vessels have shot into and from one pleura to the other, so much so that they cannot be separated or torn asunder without tearing blood-vessels and causing bleeding, we are not justified in concluding that it has been of long duration.

Sympathetic Fever.

This is a Fever, or abnormal disturbance in the system produced solely by intense pain which exists in some circumscribed part ; for instance, if a horse treads upon a nail which penetrates the coffin bone, or treads with violence upon the coronary substance, and he suffers intense pain, it will be seen that the very first time he voids his fæces after the accident, that a large quantity of coagulated secretion passes along with the fæces, his pulse will get up to 80, his breathing becomes greatly accelerated, and his temperature gets to 102 or 103°, although up to the moment of the accident the horse was in perfect health, and all the secretions were in a normal state, such is the power of sympathy, through the medium of the sympathetic nerve. Then, again, look upon a horse suffering from a sudden attack of spasm of the bowels, or Enteritis : scraping with his fore feet, kicking with his hind feet, rolling and tumbling about, becoming easy all at once, and in a few moments he seems as if his feet were nailed to the ground, metastasis having taken Fever from the bowels to the sensitive laminæ of the feet, such is the power of sympathy existing between two structures analogous in their natures. The tendency in this Fever is not like the other, it rarely locates itself in the lungs or pleura. This is an interesting problem which has exercised the deepest attention of many eminent men, and which is not yet clearly explained.

The general phenomena of Acute Sympathetic Fever in a healthy body is, in the first place, more or less contraction of the small arteries, followed by dilatation ; the small veins also become dilated, the flow of blood, which is at first accelerated, soon becomes retarded, and stagnation occurs at points commencing in the capillaries, and extending to the veins and arteries, at the point of stagnation there is an aggregation of the red and white corpuscles of the blood which appears to block up the vessels, the red corpuscles chiefly occupying the arteries, and the white ones the veins ; around the centre of stagnation there is a retarded flow of blood, in which inflammatory area the corpuscles are seen to move languidly, and beyond this there is a rapid rush of an increased quantity of blood, often called throbbing of the artery. This disturbance affects not only the small arteries in the immediate vicinity of the inflamed part, but those also at a distance ; this is shown by the increase of strength and force of the pulsation in them, as may be readily observed, the rapidity of the current of blood passing from as well as to the inflamed part is increased, sooner or later the blood current becomes retarded, usually in the veins where the white corpuscles move sluggishly, as if adhering to the sides of the vessels, while the red corpuscles and liquor sanguinis flow more rapidly in the central current. As the case becomes more advanced the white corpuscles crowd more and more into the veins, and the red corpuscles crowd in the capillaries, adhering closer to one another, and to the sides of the vessels ; in time it is found that a moiety of these white and red corpuscles pass right through the walls of the veins and capillaries without rupturing them, but consequent on their weakness, called

exudation, and form tumefaction, this is what takes place in every case where intense inflammation is in existence in any local part, whether it be in a vital organ or a non-vital part, but during the whole of this time there is also a part, and not a small part, played by the nerves supplying these vessels with motion and sensation; let us follow science, and find all her ways are ways of pleasantness, and all her flowery paths are peace.

The PRESIDENT, in inviting a discussion, said he was sorry to see so few present, and thought it paid Mr. Greaves a very poor compliment for the trouble he had taken to prepare and read them a paper, and remarked that veterinary surgeons could hardly be so fully occupied as not to spare half a day three times a year for their own special good, and thought those members who did not make some effort to attend were enemies to themselves, by too exclusively fostering their own opinions or systems which might be false or at least open to considerable modification, and, it might be, improvement. These meetings were a power for good in expanding and improving a man's knowledge, and however proficient a man might be in his own estimation, he was sure to gather something useful from associating together and interchanging opinions with other members.

Messrs. MULVEY, DAWSON, THOMPSON, BELL, sen., and the PRESIDENT joined in the discussion, which mainly related to drainage and treatment. Surface drainage was considered far preferable to underground drainage, and the President thought that venesection was too little employed in dealing with the febrile state.

Mr. THOMPSON exhibited three specimens of twisted bowels, and described the symptoms exhibited in each case. In the conversation which followed, it appeared that this lesion had been very common during the months of March and April.

Mr. BELL, sen., exhibited a bovine monstrosity, which was the second successive abnormal calf produced by the same cow. Mr. Bell attributed the abnormality to in-breeding, the cow having been served by her own son.

The PRESIDENT promised a paper for next meeting.

J. DONALD, *Secretary.*

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of this association was held at the Blackfriars Hotel, Manchester, March 11th, 1885, Samuel Locke, Esq., President, in the chair.

Mr. T. HOPKIN gave details of a very interesting case of disease of the small intestine (horse), and exhibited specimen.

Mr. WM. DACRE related a case of Alveolar Sarcoma affecting the face of a horse, and exhibited the skull. The subject was a young van-gelding, apparently in good health, and fat. The disease commenced as a small tumour just below the left eye, above the two last upper molars; growth was very rapid, and accompanied by absorption of the surrounding bony structure. The horse was destroyed in about two months from the commencement of the disease, and the specimen showed a deep circular cavity, with a diameter of about three inches.

Messrs. PETER TAYLOR, W. A. TAYLOR, THOMAS GREAVES, and W. WHITTLE spoke on the subject.

The adjourned discussion on Professor Brown's pamphlet was reopened, and continued until the close of the meeting.

The next quarterly meeting was held on June 10th, the President, S. Locke, Esq., in the chair, and there were present twenty-three members and friends.

The SECRETARY read a short report of the work done by the Election Committee, and congratulated the members on the position Mr. Peter Taylor, their candidate, held on the list of the elected.

Mr. TAYLOR returned thanks. He then referred to the death of Mr. John Greaves, of Flixton, who was one of the originators of the association, and concluded by moving that a letter of condolence be forwarded to his widow.

Seconded by Mr. JOHN LAWSON, and carried unanimously.

Mr. Woods (Wigan) was elected Life Governor in the National Veterinary Defence and Benevolent Society, in place of T. Taylor, deceased.

The following were elected members:—R. Herbert, Rochdale; J. Platt, Southport; J. Ashton, Bolton; T. and A. Leather, Liverpool; J. Faulkner, Rochdale.

The SECRETARY read a letter received from the Royal Counties Veterinary Medical Association, advocating that Clause IX. of Supplemental Charter of 1876 should be rescinded.

Mr. THOS. GREAVES opened the discussion; he reviewed the position of the profession ten years ago, and the reasons for instituting the Fellowship degree, and maintained that what the Council had done had been with the sole desire of advancing the profession.

Messrs. P. TAYLOR, A. LAWSON, J. S. HURNDALL, W. A. TAYLOR, WM. DACRE, S. HOPKIN, JOHN LAWSON, T. BRIGGS, W. WOODS, and J. B. WOLSTENHOLME spoke to the question.

Mr. A. LAWSON moved, and Mr. WOODS seconded, "That the Secretary be instructed to write to the Council, R.C.V.S., intimating that this association would respectfully suggest that in the case of M.R.C.V.S.'s who have held the diploma for ten years and upwards the examination for the Fellowship degree be chiefly of a practical character."

The resolution was passed by 8 votes against 7.

Mr. HOPKIN proposed the following amendment:—"That it is undesirable that Clause 9 of Supplemental Charter (1876) be rescinded or amended, until it has been in operation a sufficient time to prove its value or otherwise."

This was seconded by Mr. T. BRIGGS. When put to the vote, 5 were for and 10 against it.

Mr. W. A. TAYLOR suggested localisation of the Fellowship examination in centres, in a similar way to that of the Oxford and Cambridge Local Examinations; the abolition of the educational test in the case of a candidate having obtained his diploma prior to 1876; and that there be a reduction in the examination fee.

The discussion on Professor Brown's pamphlet was again adjourned.

A resolution was adopted expressing regret that time had again prevented the reading of a paper on Septicæmia, by Mr. E. Faulkner.

Mr. T. HOPKIN gave notice that at the next meeting he would bring forward the question of letters of condolence, and move a resolution thereon.

J. B. WOLSTENHOLME, *Hon. Sec.*

GLASGOW VETERINARY COLLEGE.

THE summer session of this institution terminated on 10th July, and on the 21st, 25th, and 28th the oral examinations of the Royal College of Veterinary Surgeons were conducted within the museum of the College. The Board of Examiners included Mr. George Fleming, LL.D., F.R.C.V.S.; Mr. J. Roalfe Cox, F.R.C.V.S.; Professor Duguid, F.R.C.V.S.; Professor Pritchard, M.R.C.V.S.; Mr. J. Vaughan, F.R.C.V.S.; Mr. Finlay Dun, F.R.C.V.S., London; Mr. W. A. Taylor, F.R.C.V.S., Manchester; Mr.

George A. Banham, F.R.C.V.S., Cambridge; Dr. Andrew Wilson, Edinburgh; Mr. Archibald Robinson, M.R.C.V.S., Greenock; and Mr. Richard Rutherford, M.R.C.V.S., Edinburgh. The following gentlemen were also present as *ex officio* members:—Principal M'Call, Professors Cooke, Limont, Macqueen, and Renfrew, Glasgow Veterinary College. Fifteen gentlemen presented themselves for the diploma of the Royal College of Veterinary Surgeons, and of this number the following passed:—

Mr. Moses B. Scouler, Stirlingshire; Mr. Thomas Dobie, Birkenhead; Mr. David Weir, Ayrshire; Mr. Andrew Reid, Ayrshire; Mr. Andrew A. Leckie, Dumfries; Mr. Thomas Carnachan, Stranraer; Mr. William Ferguson, Greenock; Mr. Charles J. Doyle, Bray; Mr. Alexander C. Forbes, Glasgow.

Seven students were examined for the "B," or second examination, and five passed, viz.:—

Mr. Bruce D. Miller, Glasgow; Mr. John Brown, Lesmahagow; Mr. John Caldwell, Stranraer; Mr. Gavin Miller, Glenluce; Mr. Samuel G. Howard, Glasgow.

Twenty-six students were also examined for the "A," or first examination, and of this number twenty passed very creditably. Medals granted by the Highland and Agricultural Society of Scotland (Principal M'Call), and certificates of merit by the College, were awarded in the different branches of study as follows:—

Botany.—Silver Medal (H. and A. S. of S.)—Mr. John Kernohan. First-class Certificates—Messrs. Spense and M'Kerlie. Second-class Certificates—Messrs. Begg, Williams, M'Kie, and Smith.

Chemistry.—Silver Medal (H. and A. S. of S.)—Mr. William Grinton. First-class Certificates—Messrs. Williams, Kernohan, and M'Kerlie. Second-class Certificates—Messrs. M'Nairn and Begg.

Materia Medica.—Silver Medal (H. and A. S. of S.)—Mr. William Grinton. First-class Certificates—Messrs. Smith, Begg, and Kernohan. Second-class Certificates—Messrs. M'Lean, Williams, M'Kie, and Stafford.

Junior Anatomy.—First-class Certificates—Messrs. M'Nairn and Williams. Second-class Certificates—Messrs. Kernohan, M'Kerlie, and Begg.

At the close of the examinations the Secretary to the Board of Examiners intimated that Messrs. Grinton, M'Kie, Smith, and Williams had passed with "Great Credit," and that Mr. John Kernohan had passed with "Very Great Credit."

EXAMINATIONS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

At meetings of the Scottish Section of the Board of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh and Glasgow on and between July 20th and 31st, the following gentlemen passed their Final Examination and were admitted members of the profession:—

Dick Veterinary College.

Mr. N. J. Doyle	... ...	Wexford.
„ R. Reid	... ...	Auchtermuchty, Fifeshire.
„ J. Fitzgerald	... ...	Limerick.
„ F. A. Ball	... ...	Ormskirk.
„ A. W. Davies	... ...	Hay, South Wales.
„ R. E. Thomas	... ...	Llannwchllyn, Merionethshire.
„ A. P. Taylor	... ...	St. Helen's, Lancashire.
„ F. Brown	... ...	Newcastle-on-Tyne.

New Veterinary College.

Mr. W. Allan ... ... Coull Aboyne, Aberdeen.
„ S. Jackson ... ... Liverpool.
„ T. Duckworth ... ... Tatton Hall, Cheshire.
„ F. L. Nadal ... ... Mauritius.

Glasgow Veterinary College.

Mr. C. J. Doyle ... ... Bray, Dublin.
„ M. B. Scouller ... ... Middlekerse, Stirlingshire.
„ T. Dobie ... ... Birkenhead.
„ W. Ferguson ... ... Greenock.
„ D. Weir ... ... Ochiltree, Ayrshire.
„ A. C. Forbes ... ... Glasgow.
„ A. Reid ... ... Tarbolton, Ayrshire.
„ A. A. Leckie ... ... Dumfries.
„ T. W. Carnachan ... Stranraer, Wigtonshire.

The following passed their *Second Examination* :—

Dick Veterinary College.

Mr. J. Matthews.
„ J. King.
„ S. Frost.
Mr. J. F. Roden.
„ W. Lawrence.

New Veterinary College.

Mr. E. Collins.
Mr. W. Peffers.

Glasgow Veterinary College.

Mr. B. D. Miller.
„ J. Caldwell.
„ J. Brown.
Mr. G. Miller.
„ S. G. Howard.

The following passed their *First Examination* :—

Dick Veterinary College.

†Mr. J. Cowan.
„ F. Coleman.
„ R. Edmondson.
„ C. R. Sephton.
„ J. Farrar.
„ J. George.
„ C. Nicholson.
„ J. Harle.
„ J. Pottie.
„ J. Jackson.
Mr. J. Hughes.
„ W. Henderson.
„ E. Morgan.
„ G. Sinclair.
„ J. Stewart.
„ J. Logan.
„ S. J. Hewitt.
„ W. Skinner.
„ W. Cronyn.
„ J. Whyte.

New Veterinary College.

Mr. J. Matthews.
„ F. W. Greenfell.
„ R. Shenton.
„ F. Austerberry.
* „ F. Smith.
* „ A. Bate.
Mr. J. Rigby.
„ E. Lawrence.
„ J. Gregory.
„ W. Tait.
„ J. L. C. Jones.
„ R. Scott.

Mr. O. Thomas.
„ T. Wilson.
„ W. Schorn.
* „ G. Craik.
„ E. Learoyd.
„ W. F. Shore.
„ E. W. Nieldsiddall.
* „ E. Murray.
Mr. J. Dalling.
„ D. J. Jones.
„ E. A. Saxton.
„ J. F. Carson.
„ O. J. Williams.
„ G. C. Webb.
† „ L. G. Lloyd.

Glasgow Veterinary College.

Mr. J. Spencer.
„ A. S. Macqueen.
* „ W. Grinton.
„ H. D. Young.
„ T. Miller.
„ A. B. Baird.
„ T. B. Hamilton.
„ J. Campbell.
* „ H. Williams.
† „ J. Kernochan.
Mr. W. Welsh.
* „ W. D. Smith.
„ H. Begg.
„ J. McKerlie.
* „ W. McKie.
„ J. McNaim.
„ H. Lymburn.
„ J. McLean.
„ J. Shade.
„ R. O. Stafford.

R. RUTHERFORD, M.R.C.V.S.,
Secretary, Board of Examiners.

* Marked thus passed with "Great Credit."
† Marked thus passed with "Very Great Credit."

Obituary.

IT is with deep regret that we receive the report of the death of Mr. A. Willows, M.R.C.V.S., of Sydney, New South Wales. As our readers may have observed, in perusing the section we devote to the Army Veterinary Department, Mr. Willows accompanied the New South Wales contingent to the Soudan as veterinary surgeon to the battery of artillery, and lost his health while at Suakin; and when on his return to Australia in the ship *Arab*, he died. The following particulars are given by a correspondent who was on board:—"The general happiness was marred by the death and burial at sea of Veterinary Surgeon Willows, which occurred on the 9th of June, when the ship was a few hundred miles off the Australian coast. Mr. Willows was one more victim of Typhoid Fever, having been taken ill during the last week of the campaign. He persisted in his duties until he was forced to enter the *Ganges* hospital. The case was difficult to diagnose, and he was permitted to embark on the *Arab*, but before he arrived at Aden undoubted symptoms of Typhoid were developed. When the others were sent ashore at Colombo, Mr. Willows, whose almost normal temperature gave every indication of recovery, remained aboard. The progress of the Soudan Fever is characterised by relapses of a most dangerous character, in which the temperature, without apparent cause, rises from a normal degree to 102° and 103°, when the patient rarely recovers. Mr. Willows, after several hours of unconsciousness, died shortly after midnight on the 8th of June, and was buried at six o'clock in the morning. The chaplain read the burial service. To his successful treatment, combined with extraordinary care, is attributed the loss of so few horses." In recognition of his patriotism in volunteering for service in the Soudan, the Royal College of Veterinary Surgeons, at its last Council meeting, elected him an Honorary Associate.

Army Veterinary Department.

Gazette, July 21st, 1885.

Veterinary Surgeon on probation, Frank W. Sharp, to be Veterinary Surgeon. Dated Dec. 31st, 1884.

Gazette, July 28th.

Inspecting Veterinary Surgeon Tom P. Gudgin has been placed on retired pay. Dated July 27th.

Gazette, August 4th.

Veterinary Surgeon (First Class) William Appleton, to be Inspecting Veterinary Surgeon, vice T. P. Gudgin retired. Dated July 27th.

Gazette, August 18th.

The following Veterinary Surgeons on probation to be Veterinary Surgeons: Edward Taylor, Alfred Joseph Haslam. Dated February 4th, 1885.

Jurisprudence.

IMPORTANT COW WARRANTY CASE.

In the action which has been pending for some time in the Sheriff Court, Hamilton, N.B., at the instance of William Aitken, farmer, Eastsidewood, by Carnwath, against George R. Wood, Muirhouse, Wishaw, an interlocutor has just been pronounced in the defender's favour. The pursuer concluded for repetition of the price of a cow bought by him from Mr. Wood, and which was alleged to be disconform to warranty. The proof was a lengthy one, and several eminent veterinary surgeons were adduced as witnesses. The interlocutor, which explains itself, is as follows:—

Hamilton, 6th August, 1885.—Having heard parties' procurators, and made avizandum, Finds, (1) That on 30th October last the pursuer purchased at Messrs. Marshall's auction sale at Wishaw a cow belonging to the defender at the price of £19, and warranted free from disease and correct in her vessel (udder); (2) That she was delivered on the same day, and the price paid; (3) That she was timeously rejected, but that it is not proved she was disconform to warranty at the date of sale: Assoilzies the defender from the conclusions of the action: Finds him entitled to expenses: Remits the account to the auditor to tax and report, and decerns.

(Signed) J. B. L. Birnie.

Note.—The cow was purchased at the Wishaw Auction Mart on Thursday, 30th October. During the previous summer she was at the grass on the defender's farm, having been let dry in July. She was at the auction mart on the Thursday previous to the 30th October, but not having been sold was again taken to the farm. Between the two Thursdays she was not put out to grass, but kept in the house. She was supposed to be in perfect health, having a smooth skin, and taking her food well, and between the two Thursdays appeared to have rather improved than otherwise. She was examined by the defender's manager on the evening before 30th October, and took her food well on the morning of that day. She was driven to the sale, a distance of a mile and a half, and nothing wrong was observed with her either then or in the auction ring. She was placed in the auction byre, which had both doors open, but was warm and comfortable. The day was a good winter day, and not damp. After being sold she was driven by the pursuer to the Wishaw Station, and he thought her somewhat stiff about the hind legs. She was taken by rail to Auchengray, the journey occupying about an hour and a half,

and was driven by the pursuer to his farm, two miles distant, and he again thought her somewhat stiff about the hind legs. From that time until Sunday she took no food, except a mouthful off the top of boiled food. About five o'clock in the morning she calved, and then gave only ropy milk—that is, milk mixed with suppurating matter. She continued to get worse, and died on the Wednesday week, which was the thirteenth day after the day of sale. Mr. Carmichael, who, although not a veterinary surgeon, has had long experience among cattle, saw her on the Sunday, Mr. Cassells on the Tuesday, Mr. Jarvie on the Thursday, and Mr. Cassells and Principal Walley on the Friday. Principal M'Call, Mr. Cassells, and Mr. Jarvie saw her body the day after she died. Mr. Cassells removed a portion of the udder and sent it to Principal Walley, who examined it. Principal M'Call took a portion from each of the four quarters of the udder, and these were preserved in spirits by Mr. Jarvie, and in February were microscopically examined by Dr. Limont. The evidence narrows itself into two parts—(1) Whether the ropy milk could have arisen between the Thursday at midday and the Sunday morning; and (2) whether there was interstitial tissue in the udder. Interstitial tissue is organised with blood-vessels for its support. Induration is hardening. The first could not have grown between the date of sale and the date of death. The second might, but is frequently a symptom of chronic disease, and its absence tends to show there was no chronic disease. Professor Walley says ropy milk could not have been found on the Sunday morning had the cow been free from inflammation on the Thursday. Mr. Carmichael corroborates this, and Mr. Cassells says ropy milk does not appear until the fourth or fifth day. Professor M'Call says it may have been found on the Sunday morning and the cow been free from inflammation on the Thursday; that purulent matter, which shows a more advanced inflammation, may have been so found; that he has had cows dead from the same cause in three days from health; and that what was found on the Sunday may have arisen from inflammation of the mucous membrane only, although it afterwards spread to the deeper parts of the udder. Mr. Jarvie says that ropy milk could have arisen easily from the Thursday to the Sunday; Mr. M'Callum, that it is not in harmony with his experience that cattle die in three days from inflammation of the udder, but that it is possible. Both Professor Walley and Professor M'Call found acute inflammation. They also found gangrene. The first of these may arise in a few hours, and the second in, at all events, thirteen days. Neither found abscess. Professor Walley thinks he found interstitial tissue in large quantity, and induration. Professor M'Call found lymph, which may become tissue, but thinks there was no tissue nor induration. Lymph may arise, at all events, in thirteen days. Professor Walley thinks the cow died from chronic inflammation, which became active as she approached the time of calving. His reasons are the interstitial tissue, induration, and ropy milk. Professor M'Call found no trace of chronic inflammation, and thinks the acute inflammation from which she died may, and probably did, arise subsequent to the date of sale. His reasons are the sufficiency of acute inflammation, when diffused, as in this case, to cause the symptoms he saw, and the absence of interstitial tissue and induration. In this state of the evidence, it seems to me the pursuer has not proved his claim. It is impossible to hold with Mr. M'Callum that there was interstitial tissue in the quantity spoken to by Principal Walley, unobserved by Principal M'Call—the result being that what Principal Walley thought was interstitial tissue cannot be held proved to have been so; and assuming that ropy milk arises more frequently after than on the third day, it is proved there are exceptions, and the want of symptoms of inflammation prior to the sale in this case tends to the conclusion that it was an exception.

Notes and News.

NEW YORK POLYCLINIC.—Mr. Billings, a graduate of the Berlin Veterinary School, and who has studied pathology under Virchow, has been appointed Superintendent or Director of the Laboratory of Pathological Histology and State Medicine in this institution.

THE GERMAN ARMY.—In the German Army the number of horses in the Cavalry is 62,250; Artillery, 16,591; Train, 2,457—a total of 81,598 horses. The number of veterinary officers is 619.

A NEW MEANS FOR ARRESTING BLEEDING.—At a recent meeting of the Academy of Medicine in Paris, Professor Bonafoux read a paper upon a powder which possesses great powers of stopping blood-flow, and is capable, it is said, of arresting the bleeding of large arteries, so that it will prove serviceable in important surgical operations. This powder is composed of equal parts of colophony, carbon, and gum arabic. Experiments have been tried with it on the great artery of the arm in man, and on the smaller vessels, on the carotid of the horse, and other blood vessels of the same animal, with marked success. It has always prevented consecutive bleeding. The application can be removed in the course of two or three days, when the vessels are found to be completely obliterated.

Correspondence.

A DISEASE OF SHEEP.

SIR,—Would you kindly allow me a little of your valuable space for the following inquiry, regarding a diseased condition of the eye, which came under my observation the other day?

I had occasion to be in the country, visiting a sheep-farmer, and was shown perhaps half a score of black-faced ewes, which were, some of them partially, the others totally, blind. The first animal we caught was, perhaps, the worst of the lot, and was to all appearance stone blind. I examined both eyes, and found the iris much inflamed, the pupil very much dilated; the conjunctival membrane was not to say much injected. There appeared to be an opacity of the vitreous humour, and the humour itself appeared coagulated, and pressing out through the pupil, and bulging the cornea outwards, at least as much of it as corresponded to the size of the pupil. This staphylomatous part was of a yellowish colour, apparently due to some inflammatory process in the interior of the eyeball. The cornea did not appear as if any external injury had been the cause. The inference I drew was that the lesion had commenced in the interior of the eyeball, and was working itself outwards through the pupil.

I asked the shepherd if he thought that animal would ever be able to see again, to which he replied in the affirmative; he said in about three weeks the animal would again see. He could not, however, give any cause for the diseased condition. He also informed me that he had observed a similar condition in both winter and summer, and that it affected both old and young sheep. I was shown another animal that had recovered and was able to see; but certainly the recovery did not appear complete, as there still remained a slight opacity of the humour. The disease is probably "Keratitis;" but what I more particularly wish to know are the causes generally giving rise to it, also the treatment to adopt, especially the preventive treatment, if any.

Perhaps some of the readers of your valuable Journal, particularly in the

North, who are accustomed to large sheep practice, might be able to give a little light as to the cause, or causes, etc., of this condition.

D. H. W., *Veterinary Student.*

UNPROFESSIONAL ADVERTISING.

SIR,—I want to know, through your Journal, if a Mr. Edward Moore, of Albany, N.Y., a graduate of 1877, was Cattle Plague inspector for the British Government, as he claims to have been, in his advertisements, which I enclose you.

As the Cattle Plague has not been in England since 1866, it seems to me that the gentleman never saw a case of it in his life. If it is Pleuro-pneumonia he means, it is rather strange that the British Government should appoint an inexperienced American student in preference to its own practical, qualified men. By answering this in your next Journal you will confer a favour.

ROBERT LAIDLAW.

Albany, N.Y., *July 13th.*

PARLIAMENTARY REPRESENTATION IN COUNCIL.

SIR,—On page 112 of your last month's issue, it is stated that "Dr. Fleming said it was the general opinion of the Council of 1882 that such a scheme as that proposed by Mr. Cunningham would not work."

The scheme is our Parliamentary System. It works at every General Election; it works at every meeting of Parliament for the consideration of things great or small. It is a fair system, an economical system, an equally representative system; it is easily adapted to our annual elections and council meetings. Will Dr. Fleming, through your columns, kindly give us the reasons for this opinion of Council? Will he, as a personal favour, show me how, and in what way, the scheme would not work?

On page 113, in Mr. Banham's address to the Norfolk Association, are the following words:—"England has the largest number of practitioners, and will have, at least for a long time to come, do what we will; and as she has the largest number, she ought to be 'majority,' and the minority ought to learn to give in to her rule."

England is the "majority," Scotland is the "minority"; therefore, in Mr. Banham's opinion, Scotland should give in to England's rule, at least for a long time to come.

I thank Mr. Banham for his plain words, and before making any comment on them, will Mr. Banham kindly tell us in what, save sheer dead force of numbers, England is in the majority? There are more veterinary colleges in Scotland—more students educated there. There are as good men and as good practitioners in Scotland as in England. And I have yet to learn why the veterinary surgeons of Scotland "ought to give in" to their brethren across the border in any subject whatever. Will the Honorary Secretary of the British Veterinary Medical Association kindly give us some good and sufficient reason why Scotland ought to give in to England's rule for a long time to come?

Do twenty-eight men from England and two from Scotland make a fairly representative Council? Into whose imagination did the brilliant idea enter that "the Council should be composed equally of two Irish, four Scotch, and eighteen Englishmen"? Certainly not into mine. What though "the schools, Ireland, and Scotland put together, be in the minority"? If the schools, Ireland, and Scotland be fairly and justly represented, it is all they deserve—all I ever asked for them. Were they properly represented in 1882? Are they properly represented now? *Full, fair, just, special, and direct representation in Council to each country, each college, each county, city, and*

individual member of the body corporate, at one-fifth the expense and trouble of the present system, is the sum and substance of the Parliamentary scheme I proposed in 1882—nothing less, nothing more.

Let Dr. Fleming, and Mr. Banham, and the Members of Council of 1882 read and understand the scheme, as they will find it in the VETERINARY JOURNAL and the *Veterinarian*, July, 1884. Let them master its little simple details; let them not, like one at least of the Council, require to be "informed" about it; and let them come to your pages, sir, and condemn it if they can. That is the manly, straightforward course to pursue, and no one will be better pleased to see them following it than myself.

To conduce to this end, I tell the advocates of the past and present systems of election and representation of the Royal College of Veterinary Surgeons, that these systems have been, and are, *partial* and *unjust* systems, favouring the south at the expense of the north—favouring members and populous centres, filling the Council with men who have not fairly represented, and do not fairly represent the veterinary profession throughout the United Kingdom. I tell them that by a common vote or plebiscite, a Council fairly representative of all the veterinary surgeons of the country never has, and never will be obtained; the dull, dead, heavy force of the 1,500 practitioners of England tells at the poll with fatal force against the 350 of Scotland. I tell them that their present system is a cumbrous, heavy-working, selfish, tyrannical, antiquated system—causing much work, spending time and money, and giving a bad result—old as the hills, and well nigh as heavy; worse even than that of the primitive ancients, for heathens and savages generally know the men they are to vote for; but we each year have to leave in or to erase the names of many men of whom we simply know nothing whatever. I tell them, moreover, that in the Parliamentary mode they will find a plain, simple, easy, inexpensive, fair, and just mode of election and representation that will fill the Council-chamber with men fairly representing the profession throughout the length and breadth of the land, and form a Council worthy of the Royal College of Veterinary Surgeons of Great Britain and Ireland.

These are plain, rough words. Let Dr. Fleming, Mr. Banham, and the "Council of 1882," and those of like mind with them, disprove them. The argument is stale that the Parliamentary scheme would require a New Charter. Where there is a will there is a way, and new charters have been obtained, in my humble opinion, for more unworthy objects. The present system of election required a New Charter, and so did the Fellowship Clause, and the Fellowship Clause has created much disturbance and discontent, and bids fair to divide the profession once more.

The spectacle at Carlisle, on pages 126 and 127, is very edifying. Mr. Greaves, of Manchester (high and lifted up as a "Fellow"), calling to the "excellent men," the "educated men," the "eminent men," the "worthy men" of "our profession" (who happen to be far down below plain members), "See the height and high position to which we Fellows are striving to attain. Come up and join us; we want ye, every one. The whole profession in England, Scotland, and Ireland was carefully and most anxiously considered for the men of excellence, and the best selection made," and Mr. Greaves, of Manchester, and his fellow-councillors were included, and a host of really good men left out; and this was the work of the Council and their New Fellowship Charter.

Had the Council, sir, allowed the Fellowship Clause to slumber for the next twenty years, and "gone in" for a better and fairer and simpler mode of election and representation, they would, so far as I am able to judge, have acted wisely and well.

Slateford, *17th August*, 1885. C. CUNNINGHAM.

AN APPEAL TO THE VETERINARY PROFESSION.

DEAR SIR,—At one of the Council meetings a letter was read from the widow of the late Mr. A. Bowles, V.S., of Ely, who left his widow penniless. She has been bedridden many years; the only son at home is paralysed on the right side. Mr. Hardcastle, V.S., of same town, states:—"I have no hesitation in saying any help would be charity well applied, and sadly, most sadly needed."

It will give me great pleasure to receive any subscriptions you will kindly forward me for this benevolent purpose, and which shall be at once sent to her.

THOS. GREAVES.

Knott Mill, Manchester, *August 12th.*

P.S.—I have collected and forwarded £10 to her; a list of subscribers will appear in October journals.

TO CORRESPONDENTS.

F. RAYMOND.—Perhaps the best professional journal in German is the quarterly *Deutsche Zeitschrift für Thiermedicin und Vergleichende Pathologie;* in French, the *Recueil de Médecine Vétérinaire* is the best, and is published semi-monthly.

F.R.C.V.S.—It is entirely wrong to assert that the profession was not made aware of the terms of the Charter with regard to the Fellowship degree. In the published Proceedings of the Royal College, in the publication of the Charter itself, in editorial articles (notably that in Vol. iv., p. 268), and notices, as well as in correspondence, in this Journal, constant allusion has been made to the degree. Everything has been done openly, and with the full knowledge and consent (if silence implies consent) of the profession.

INQUIRER.—Membership and Fellowship of the Royal College are only to be obtained by examination. The College has the power, conferred by Charter, of electing Honorary and Foreign Associates.

G. A. MCLAUGHLIN, U.S.A.—We see no advantage in publishing your letter, which is very long and too personal, and would, it is to be apprehended, have no beneficial influence on the individual to which it refers. He will become toned down with time.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from Prof. McCall, Glasgow; A. Shawcross, Louth; C. Gresty, Newcastle-on-Tyne; R. Laidlaw, Albany, N.Y.; J. H. Steel, A.V.D., Bombay; C. Hartley, Lincoln; G. A. McLaughlin, Providence, U.S.A.; "W. H. D;" E. A. Hollingham, Redhill; E. Beddard, Wolverhampton; J. A. Nunn, A.V.D., Lahore; T. Chalwin, South Australia; "Inquirer;" J. Hunter, Skene; G. A. Banham, Cambridge; J. Mills, A.V.D., Madras; H. Kidd, Hungerford; R. Rutherford, Edinburgh; J. B. Wolstenholme, Manchester; J. Nettleton, Northallerton.

BOOKS AND PAMPHLETS: Annual Report of the Department of Health of the City of Brooklyn; *G. Gresswell*, The Place of Physical Science in Education; Annual Announcement of the New York Polyclinic; Bulletin du Comité Consultatif de Belgique; *W. Zopf*, Die Spaltpilze; *A. Johne*, Ueber die Koch'schen Reinculturen und die Cholerabacterien; *M. Cornevin*, Première Etude sur le Rouget du Porc.

JOURNALS, ETC.: *British Medical Journal; Lancet; Archiv für Wissenschaftliche und Praktische Thierheilkunde; Annales de Médecine Vétérinaire; Recueil de Médecine Vétérinaire; Œsterreichische Vierteljahresschrift für Wissenschaftliche Vétérinärkunde; Revue Vétérinaire; Revista Popular de la Exposicion Rural; Der Thierharzt; L'Écho Vétérinaire; Wochenschrift für Thierheilkunde und Viehzucht; Live Stock Journal; Mark Lane Express; Der Hufschmied; Quarterly Journal of Veterinary Science in India; National Live Stock Journal; Clinica Veterinaria; La Presse Vétérinaire; American Veterinary Review; Edinburgh Medical Journal; Field; British Medical Journal.*

NEWSPAPERS: *York Herald; Adelaide Express and Telegraph; Hamilton Advertiser; Eastern Counties Gazette.*